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Special Issue on

RULES WITHOUT WORDS: INQUIRIES INTO NON-LINGUISTIC NORMATIVITIES

Edited by Sanja Bojanić , Olimpia Giuliana Loddo , Marko-Luka Zubčić

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SECTION 3. OUTSIDE THE HUMAN SOCIAL WORLD

This issue of our journal is honoured to host a paper by Amedeo G. Conte, who sadly passed away on May 17th of this year. He was born in Pavia on May 24th, 1934. Professor Emeritus of Philosophy of Law at the University of Pavia and Fellow of the Accademia Nazionale dei Lincei, he was the author of an impressive series of works on deontic logic and philosophy of normative language, as well as the inventor of the literary genres of "eidograms" and "spores". Widely recognized as "a great thinker, whose ideas will live on into the future" (Barry Smith), he was also a poet, and a man who kept wondering about life and death, time and eternity, and the inevitable complementarity of light and shadow, which he calls in one of his poems the "silent witness of light".

He was known to every Italian philosophy student for his clear translation of Wittgenstein's *Tractatus* and, even better, for being the founder of an ontological-social and normative school of thought. In many respects, he thus anticipated world-renowned authors, such as John Searle, in opening up research fields that are today at the centre of international debate. He was at home in many languages and in all the philosophical lexicons of Europe; his prose was characterized by an extraordinary limpidity and rigor, that not only made his writing unique but recognizable in the work of all his pupils. All who met him in person felt in his way of being, researching, and teaching the breadth of humanity, indeed a generosity that made him unforgettable. We are all proud to have been, in some small way or another, his pupils.

Roberta De Monticelli
Editor in Chief

INTRODUCTION

INTRODUCTION

Sanja Bojanić, Olimpia Giuliana Loddo, Marko-Luka Zubčić

SANJA BOJANIĆ
University of Rijeka

OLIMPIA GIULIANA LODDO
University of Cagliari

MARKO-LUKA ZUBČIĆ
University of Rijeka

INTRODUCTION[1]

1 This introduction is the joint work of three authors. The two opening paragraphs (1.1, 1.2) were written by Sanja M. Bojanić, while paragraphs 1.3, 1.4, 2.2 and 2.1, 2.3., 3. were authored by Olimpia G. Loddo and Marko Luka Zubčić respectively. The authors assume responsibility for the statements made.

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1. Tracing Unspoken Norms

1.1. How do rules emerge and what is needed for their articulation? What conditions need to be satisfied for rules to acquire the meaning that ensures their application? Could unspoken rules, therefore, be regulated through ways of acting, conduct, gesture or instructed prescription? In which case, what is their ontological, epistemological, cognitive or normative nature? How are these tacit rules understood in the first place, how are they interpreted and applied? How can they be justified, how followed? Conversely, how might they be circumvented or on what grounds disobeyed?

1.2. As guest editors of this special issue of *Phenomenology and Mind* entitled "Rules without Words: Inquiries into Non-Linguistic Normativities," we sought to present a specific branch of the phenomenology of normativity in which rules emerge from phenomena and then also from entities not strictly linguistic in nature. By choosing the topic of non-linguistic rules, our wish was to take different philosophical perspectives – social philosophy, philosophy of law and jurisprudence, epistemology, political philosophy, philosophy of language, media studies, ethology, cognitive science, as well as social psychology, gender studies, among others – to provide, at least to start with, an overview of some of the current philosophical debates converging on its distinctive ontological features. For example, the relation of non-linguistic rules to a specific social reality, but also the possibility of their emergence in non-human communities. Also, the subject of our interest was whether we distinguish between epistemic types of rules whose meaning is not linguistic in origin? As well as whether some forms of social inequalities stubbornly persist precisely due to non-linguistic rules? Perhaps the matter is exactly the inverse, and positive social values can be promoted based on non-linguistic content? Is a systematic account of the formation of tacit normative social constraints even possible in the physical and social world, and is this the path forward in their deconstruction?

1.3. Philosophical investigations that thematise rules often connect their appearance with language and thus with words. The latter are conceived as essential elements of the concept of rule, in a way identifying rules and word-made entities such as propositions, sentences or statements.

1.4. However, although words are widely considered the most raffinate and efficient instruments to express concepts that refer to non-material realities, i.e., realities that cannot be perceived directly through a sensorial experience, a great number of entities that are not linguistic in character thus remain beyond the reach of understanding. Undoubtedly, it is impossible to have sensorial perception of obligations or permissions. It is also impossible to have a sensorial perception of institutional facts (I can touch a piece of paper that counts

as money, but I cannot touch money). Therefore, given that obligations and permissions are immaterial entities, words are the most efficient tools to express normative contents, the most effective instruments to build social reality. Still, this apparent pragmatic supremacy of words shows a number of gaps that lead to several unexplored research fields.
Rules are not the only word-made entities that the lawmaker uses to direct people's behaviour. Indeed, there can be unspoken customary rules. There are unexpressed laws that enable understanding of natural phenomena. Ethologists note the existence of social practices and primitive forms of regulation in non-human animals.
Unexpressed background rules are also indispensable tools both for understanding and construction of institutional phenomena. Also, the understanding of normative signs (words, drawings, gestures, etc.) depends on unexpressed rules that exist independently from their codification.
Further, from a pragmatic point of view, the supremacy of word-made rules can be challenged. In particular contexts, pictures can fulfil a normative function more efficiently than words. In this sense, the hegemony of words in the normative field can be considered a theoretical cage. This special issue thus aims at prying open the bars of this theoretical cage.
We are honoured to include in this special issue the essay *Athetic Validity* by the philosopher Amedeo Giovanni Conte. We are greatly saddened that he was not able to see the publication of this issue. Conte was an endless source of philosophical inspiration, a prominent scholar who generously devoted his entire life to research. Both his ground-breaking philosophical investigations and his selflessness should be a model for future generations of scholars and philosophers. His students and his colleagues deeply regret his loss. *This special issue is therefore dedicated to his memory.*

2. The Special Issue

The issue is divided into three sections. The first focuses on theoretical investigation tools for various forms of rules without words. The second aims to investigate specific kinds of rules without words: normative pictures. Finally, the third section focuses on non-human normativity that subsists independently of the human social world.

2.1. Conceptual Investigations

The essay "Athetic Validity" by A.G. Conte opens the first section of our special issue. Starting from the analysis of three conceptual paradigms formulated by Theodor Geiger, Conte elaborates the concept of the athetic – as opposed to thetic – validity of norm. Thetic validity is the deontic validity that is the product of a thetic act of position, such as the enactment of a norm; conversely, athetic validity is the deontic validity that is not the product of a thetic act of position. The concept of athetic validity sheds light on the distinction between subsistent norms and deontic sentences and explains how a norm can exist and be valid independently of any act of position, independently even of any linguistic formulation.
Patrizio Lo Presti's paper closely examines the conceptual relations of "norms" and "rules", developing a precise clarification of the distinction as well as "dynamic casual co-influence".
Pietro Salis defends Robert Brandom's account of implicit normativity of social practices by clarifying the correct understanding of sanctions and the expressivist take on normative vocabulary. Here the words make explicit what is implicit in an already normative practice - the moves made by agents in a social game. Alexander Albert Jeuk challenges the view that normativity is derived from linguistically mediated social practice – it is rather, the author argues, care for oneself and others that is the central source of normativity in human action. R.T. Allen's paper provides insight into Michael Polanyi's account of tacit norms, demonstrating that the concerns about non-linguistic norms feature prominently in a variety of traditions of thought.
Challenging the heuristic proposal aimed at overcoming the dogma of word-made rules comes in the paper "Corporeal drawn norms. An investigation of graphic normativity in the material

world of everyday objects" by Giuseppe Lorini. He supports the thesis that rules without words are not necessarily athetic rules. Therefore, the concept of athetic validity proposed by A.G. Conte does not entirely overlap with the category of rules without words. In particular, Lorini shows that there are thetic rules without words, such as graphic rules (e.g. traffic signs). In this sense, Lorini's paper builds a bridge between sections "On Conceptual Investigations" and "Images and Rules".

2.2. Images and Rules

Images are multitasking instruments. They contribute to the construction of social reality. As well as a toolbox, they play an extremely important role in child games. And as mentioned in the precious essay by Patrick Maynard, the role they play in the child games is interrelated with the one they play in society.
Images' multitasking nature is a particular aspect they share with words: they do not necessarily aim to mirror reality, but their function is more diffuse. Indeed, they carry a normative function. In this sense, an interesting heuristic hypothesis is that normative language in a wider sense can include not only deontic sentences but also a deontic graphics. They can have an impact on social reality, they can persuade, they can reinforce collective attitudes. Guglielmo Siniscalchi's paper explores the realm of Deontic Visual Signs in the legal field, seeking to analyse their different actual and potential functions. Interestingly, it is possible to use pictures to perform acts that in traditional philosophical lexicon would be called "speech" acts. This last aspect is specifically explored in Jakob Krebs' paper "Promising Pictures Depicted Promises, Advertising Promises, and Promising Pictorial Instructions". Luigi Cominelli attests to the extremely relevant impact of images on society, which drives towards more intensive studies aimed at improving visual normative communication. An important example in this regard comprises the improvement of traffic regulation. A normative-semiotic perspective must be integrated with a cognitive perspective to achieve higher degrees of precision and predictability in normative visual communication. In a related essay, Mariela Aguilera focuses on the capacity and limitations of different kinds of representational media to express normative contents, that is, to express the content of rules.
The section closes with the innovative investigation by Valeria Bucchetti and Francesca Casnati, showing how graphic norms can also contribute to maintaining a specific social structure by hiding a set of undeclared ideological presuppositions and tacitly endorsing social practices that reinforce gender inequalities.

2.3. Outside the Human Social World

Stepping outside the distinctly human social world, the contributions by Laura Danón, Carlo Burelli and Jean-Charles Pelland investigate a normativity arguably fully irreducible to language. Danón's exceptional paper delves into the normative capacities of non-human animals, detailing the models of reflexive and primitive normativity, where the latter does not necessitate reason-exchange representative of human nomic animals, but requires "mere" ability to recognize appropriateness or fittingness of response to a situation. Danón explores the possible conceptual developments derived from understanding primitive normativity through the notion of "robust ought-thoughts" sufficient for a creature to follow norms even in absence of "fancier" abilities for entertaining counterfactual accounts, thinking about norms as norms, and engaging in the game of giving and asking for reasons. Burelli develops an analysis of functional normativity, showing how evaluative standards intrinsic to functional accounts may illuminate their normative nature, and delineating clear cases of independence of functional and moral norms. The Special Issue closes with Pelland's inspection of the origins of norms, returning to the problem of Wittgenstein's infinite regress in the account of rule-following and examining Ruth Millikan's naturalization of intentions as a potential response to it. Perhaps norms, Pelland elucidates in the last part of his paper,

are a diversity of "oughts" grounded in unexpressed biological purposes, flourishing into expressed social rules.

3. Conclusion

"Rules without Words: Inquiries into Non-linguistic Normativities" makes clear that the research into non-linguistic normativity takes place through a variety of philosophical and social-scientific fields. It provides insight into a rich diversity of investigative trajectories concerned with normatively "ordering" the dynamics beyond a purely linguistic purview. And yet, this is merely an introductory fragment of "rules without words" that permeate our worlds, and towards which a proper investigative vigilance is just beginning to accrue. The purpose of this Special Issue is to contribute substantially to these efforts.

We would like to extend our gratitude to editors of *Phenomenology and Mind* for their openness to this relevant topic and their outstanding support during the development of our work. Our thanks go to Francesca Forlè whose substantive advice and guidance were instrumental in coming to terms with editorial difficulties. It was a delight and an honour to guest edit the present Special Issue of *Phenomenology and Mind*.

SECTION

SECTION 1

CONCEPTUAL INVESTIGATIONS

AMEDEO G. CONTE
Università degli Studi di Pavia
Accademia Nazionale dei Lincei

ATHETIC VALIDITY[1]

abstract

Starting from the analysis of three conceptual paradigms formulated by Theodor Geiger, this paper elaborates the concept of the athetic validity of a norm, in contrast to the concept of thetic validity. Thetic validity is the deontic validity that is the product of a thetic act of position, of an act of thésis, such as the enactment of a norm; athetic validity is conversely the deontic validity that is not the product of a thetic act of position. The concept of athetic validity sheds a light on the distinction between subsistent norms and deontic sentences and explains how a norm can exist and be valid independently of any act of position, and even independently of any linguistic formulation of that norm in a deontic sentence. It also makes it possible to dissolve a seeming paradox implied in Geiger's notion of declarative deontic sentences, which ascertain the athetic validity and at the same time constitute the thetic validity of a subsistent norm.

keywords

norm, Normsatz, deontic sentence, athetic validity

1 Translated from the Italian by Gaea Zélie Vilage, edited by Olimpia G. Loddo (University of Cagliari) and Lorenzo Passerini Glazel (University of Milano - Bicocca). The original paper *Validità athetica* by Amedeo G. Conte was published in *Studi in memoria di Giovanni Tarello*, Milano, Giuffrè, 1990, vol. II, pp. 163-176, and it was later republished in Amedeo G. Conte, *Filosofia del linguaggio normativo. II. Studi 1982-1994*, Torino, Giappichelli, 1995, pp. 409-424. The editors of this translation updated the bibliography and introduced in square brackets the most recent (and more easily available) editions of the bibliographical references in the original version of the paper. We are grateful to the original publisher, Giuffrè-Francis Lefebvre, for the authorization to publish this translation.

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Introduction[1]

by Olimpia Giuliana Loddo and Lorenzo Passerini Glazel

1. The following article is the English translation of the essay *Validità athetica* (*Athetic Validity*) by Amedeo G. Conte. This essay was first published in 1990 in the collection *Studi in memoria di Giovanni Tarello*, edited by Silvana Castignone.
In this essay, Conte offers an in-depth analysis of one of the concepts of deontic validity[2] that he had previously identified in the paper *Minima deontica*, published in 1988. In *Minima deontica*, Conte outlined a "paradigmatics" of validity. Conte's paradigmatics of validity is rooted in the consideration that the term 'norm' is not univocal, since it can alternately refer to (at least) four different entities[3]. More specifically, the term 'norm' can refer to a deontic proposition, to a deontic sentence, to a deontic utterance (such as a speech act imposing a norm), or to a deontic state of affairs (a deontic state of affairs is the *análogon*, in the "realm of the ought", of what a state of affairs is in the "realm of the is"; an example of a deontic state of affairs is an obligation that is in force in a specific legal system)[4].

2. If the term 'norm' is not univocal, then the sense in which the deontic *validity* is predicated of a norm is not univocal. More specifically, Conte (1988; 2012) distinguishes three different concepts of validity in deontics: (i) pragmatic validity (the validity of deontic utterances, such as the linguistic act of enactment of a bill), syntactic validity (the validity of deontic states of affairs), (iii) semantic validity (the validity of deontic sentences).
The athetic validity investigated in the paper translated here is a specific kind of syntactic

1 This introduction is the result of joint research undertaken by the two authors. The final version of Sections 1. and 3. can be attributed to Olimpia G. Loddo, and that of Sections 2. and 4. to Lorenzo Passerini Glazel. Both authors consider themselves responsible for every word of their joint work.
We are grateful to the editorial team of *Phenomenology and Mind* and to the guest editors of this special issue for the opportunity to publish the English translation of *Validità athetica* by Amedeo G. Conte.
2 The concept of "deontic validity" (with reference to which one can say, for instance, that a norm is valid within a given normative system) is obviously heterogeneous from the concept of "logical validity". Conte has repeatedly investigated the possible (or impossible) relationships between logical validity and deontic validity (see, among others, Conte 1965; 1967; 1968; 1986; 1997).
3 As Paolo Di Lucia (forthcoming) points out, the distinction between the four entities referred to by the name 'norm' is the presupposition of the paradigmatics of validity elaborated by Conte. Di Lucia also remarks that through this distinction Conte overcomes the conception of norms as linguistic entities. See Conte (1970), and (with the addition of a fifth referent: the deontic noema) Conte (2006; 2012; 2017).
4 Cf. Di Lucia (forthcoming).

validity, i.e. of the type of validity that is predicated of a norm as a deontic state of affairs or, in the lexicon of Theodor Geiger recalled by Conte, as a "subsistent norm" ("*subsistente Norm*"). Here, athetic validity is specifically the (syntactic) validity of a deontic state of affairs that is not the product of an act of *thésis*, of an act of position (such as, for instance, a legislative enactment)[5].

3. Through the concept of athetic validity and through the analysis of Geiger's paradigms "*Normsatz vs. subsistente Norm*" ("deontic sentence *vs.* subsistent norm") and "*proklamativer Normsatz vs. deklarativer Normsatz*" ("proclamative deontic sentence *vs.* declarative deontic sentence"), Conte challenges the conceptions of norm as a linguistic entity, highlighting on the one hand the lack of a necessary correlation between norms and proclamative deontic sentences, and, more generally, the lack of a necessary correlation between norms and deontic sentences on the other hand. The very existence of a norm in a normative system does not presuppose a proclamative deontic sentence that was formulated to promulgate that norm. More in general, the very existence of a norm in a normative system does neither consist in nor necessarily presuppose the presence of a deontic sentence (whether declarative or proclamative). This is the case, for instance, with the famous customary norm expressed by the sentence 'Three are for free' ('*Drei sind frei*'): according to Geiger, the norm expressed by the sentence 'Three are for free' was in force—and therefore subsisted, was valid—in a Germanic tribe before the sentence expressing the norm "*Drei sind frei*" was formulated. In this case, the sentence '*Drei sind frei*' does not have a proclamative nature, i.e. it is not the product of a thetic utterance that promulgates a new norm. On the contrary, the sentence presupposes the existence (and thus the athetic validity) of the norm that it expresses.

4. However, Conte underlines an apparently paradoxical aspect of Geiger's concept of the declarative deontic sentence. Indeed, according to Geiger, when a declarative deontic sentence expresses (codifies) an already existing customary norm, that sentence not only ascertains the existence of that norm but at the same time it also *validates* a model of behaviour, thus consolidating the existing norm. Conte unravels this apparent paradox precisely through the distinction between thetic validity and athetic validity. He thus suggests the possibility of investigating normative phenomena, and in particular rules without words and the evolution of customary orders, in the light of a stratigraphy of validity.

* * *

5 Athetc validity is opposed to thetic validity. The paradigm "thetic *vs.* athetic" is transversal to the three concepts of deontic validity (semantic validity, syntactic validity, pragmatic validity) distinguished by Conte.

ὄψις τῶν ἀδήλων τὰ φαινόμενα.
Phenomenal appearance is the visible aspect of the non-phenomenal.
(Anaxagoras).

1. The Thetic Validity *vs.* Athetic Validity Paradigm

1.1. The Terms of the Paradigm

The paradigm: *thetic* validity *vs. athetic* validity was formulated in a recent contribution to the deontics of validity: Amedeo G. Conte, *Minima deontica*, 1988 [1995].

1.1.1. *Thetic* validity (in German: *thetische Gültigkeit*, in French: *validité thétique*, in Italian: *validità thetica*) is the deontic validity (*deontische Gültigkeit*, *validità deontica*, *validité déontique*) which is the product (the *wytwòr*, to borrow a term from Polish philosopher Kazimierz Twardowski's lexicon) of a thetic act of position, of an act of *thésis.*
The adjective 'thetic' refers to the Greek noun '*thésis*', which is equivalent to the term 'position', to the German '*Setzung*'.

1.1.2. *Athetic* validity (*athetische Giiltigkeit*, *validité athétique*, *validità athetica*) is the non-thetic validity, i.e. the deontic validity which *is not* the product (the *wytwòr*) of a thetic act of position, of an act of *thésis.*
To put it plainly, the term 'athetic' is formed by the prefixation of an *alpha privativum* to 'thétic' (cf. 'abulic', 'anemic', 'arrhythmic').

1.2. The Grounds of the Paradigm

1.2.1. The elaboration of the concept of athetic validity is a purely theoretical operation, which does not have presuppositions or implications that are extraneous to philosophical theory. The elaboration of the concept (*Begriff*) of athetic validity is not the reflection of (and is not reflected in) any conception (*Auffassung*) of deontic validity.

1.2.1.1. It is not the *recognition* of the phenomenon of athetic validity that has atheoretical presuppositions and implications, but, on the contrary, its *disavowal*. The disavowal of Patrick Maynard, that is, the uncritical reduction of deontic validity to thetic validity (the contraction of deontic validity into thetic validity), is the constitutive step of the conception of deontic validity that is proper to legal positivism.

1.2.1.2. That the *concept* (*Begriff*) of athetic validity is not connected with a single specific *conception* (*Auffassung*) of deontic validity is proved by the fact that the phenomenon of athetic validity is documented in two philosophers of law who have opposing *Weltanschauungen* and opposing philosophical styles: Giovanni Tarello (*Teorie e ideologie nel diritto sindacale*, 1967), and Luigi Lombardi Vallauri (*Saggio sul diritto giurisprudenziale*, 1967).

1.3. Heuristic Fruitfulness of the Paradigm

The paradigm: thetic validity *vs.* athetic validity is heuristically fruitful both in the *theory* of deontic validity and in the *metatheory* of theories of deontic validity.

1.3.1. *Firstly*, the paradigm: thetic validity *vs.* athetic validity is heuristically fruitful in the *theory* of deontic validity. In the light of this paradigm, it is possible to recognize and obtain knowledge of anomalous deontic phenomena, i.e. forms of deontic validity that are often disregarded precisely due to their anomaly, to their atypical nature.

1.3.2. *Secondly*, the paradigm: thetic validity *vs.* athetic validity is heuristically fruitful in the *metatheory* of theories of deontic validity.
More specifically, in the light of this paradigm, it is possible to reveal and overcome a paradox that seems to exist in the contribution that an eminent philosopher of the social sciences, Theodor Geiger, made to the deontics of validity in his book: *Vorstudien zu einer Soziologie des Rechts* (1947)[1].

2. A Paradox

2.1. Paradigms of the Paradox

The book *Vorstudien zu einer Soziologie des Rechts* [*Prolegomena to a sociology of law*] (Geiger, 1947) is not a work on the deontics of validity. However, three paradigms appear in the *Vorstudien* that are all relevant both for *deontics*, and for *metadeontics*. The three paradigms are:

(i) deontic regularity *vs.* adeontic regularity;
(ii) norm *vs.* deontic sentence;
(iii) proclamative deontic sentence *vs.* declarative deontic sentence.

I will explain these three paradigms, drawing freely from my own concepts and vocabulary, in §§ 2.1.1., 2.1.2., 2.1.3. of this essay, *Athetic Validity*.

2.1.1. First Paradigm: Deontic Regularity *vs.* Adeontic Regularity

2.1.1.1. The terms of Geiger's *first paradigm* are two types of regularities:

(i) deontic regularity (*Regelmäßigkeit*);
(ii) adeontic regularity (*Regelhaftigkeit*).

2.1.1.2. Alberto Febbrajo (1979) sheds light on the distinction between deontic regularity and adeontic regularity. A reference point for Febbrajo is Amedeo G. Conte's essay *Codici deontici* (1976 [1995]).

2.1.1.2.1. Here is the *question* asked in *Codici deontici.*
Is there a *discrimen* between (deontically non-neutral) *following a rule* and (deontically neutral) *continuing in a regularity*?

1 In this essay, the adjective 'thetic' ('*thetisch*', '*thétique*', '*thetico*') is a predicate of *deontic validity* (*deontische Gültigkeit*, *validité déontique*, *validità deontica*), and not of norms (in one of the meanings of the term 'norm').
Instead, 'thetic' often appears as a predicate of *norms* in works by Polish authors, where (starting with Cz. Znamierowski) the phrase '*norma tetyczna*', '*thetische Norm*', '*norma tetica*', 'thetic norm', often appears. In A. G. Conte (1977a; 1977b [1995]; 1978 [1995]; 1985; 1988 [1995]) there is a list of works by Polish authors (works in Polish: Jerzy Kalinowski, Kazimierz Opałek, Zygmunt Ziembiński; works in German: Kazimierz Opałek, Ryszard Sarkowicz; works in Italian: Feliks Bednarski), in which '*tetyczny*' or its equivalent term in other languages appears.
Inexplicably, some Polish scholars use the Polish adjective '*tetyczny*' without realizing its etymon ('*thésis*', '*thetikós*'). An indicator of their uncertainty on the etymon of this adjective is the way in which they render '*tetyczny*' in languages in which (unlike that which occurs in Polish) the Greek theta is expressed using the digram '*th*'. Besides the correct spellings '*thetic*' and '*thetisch*', I have encountered both 'tethic' (with an inversion of '*t*' and '*th*'), and '*tetisch*' (with '*t*' replacing the digram '*th*').
G. P. M. Azzoni (who originally contributed to the elaboration of the paradigm: thetic validity *vs.* athetic validity) indicates the appealing parallel between this paradigm and F. A. von Hayek's paradigm: *thesis vs. nomos*. Hayek's philosophical relevance is validated by E. di Robilant and M. Barberis.

2.1.1.2.2. And here is the *answer* given in *Codici deontici.*
There is a *discrimen* between (deontically non-neutral) *following a rule* and (deontically neutral) *continuing in a regularity*. It pertains to what Ludwig Wittgenstein would call the *Grammatik* of the two terms 'rule' and 'regularity'.

2.1.1.2.2.1. A *regularity* is simple (by definition), it is *one*, and it is necessarily identical to itself.

2.1.1.2.2.2. This is not so for the *rule*: a rule can in fact be *one* and *twofold.*
A rule is one and twofold in the proairetic paradox of Orestes (investigated in the essay *Codici deontici*).
The rule that prescribes that Orestes honour his parents is infringed whatever way Orestes acts.
He infringes it if he avenges his father, he infringes it if he does not avenge his father.
"Deontically speaking, the rule *is one*; proairetically, it is *twofold*"[2].

2.1.1.2.3. The *conceptual question*, whether there is a *discrimen* between *continuing in a regularity* and *following a rule* (a question discussed in Conte 1976 [1995]) is distinguished from the *epistemological question*, whether it is possible, by observing an action, to infer (by induction, or, as I see it, by abduction: abduction is a concept introduced by Charles Sanders Peirce) which rule the observed action follows.

2.1.1.2.3.1. I have investigated that subject with reference to eidetic-constitutive rules. As a complement to what I have written elsewhere, here I will briefly outline the presuppositions (*Präsuppositionen*, *présuppositions*, *presupposizioni*) of the question, which rule the observed action follows.
The question of which rule an action follows, has two presuppositions.

(i) *First presupposition*: presupposition of *non-anomicity* (of *ananomicity*). The first presupposition is that the action is *not anomic* (the action is *not anomic* if, and only if, the agent follows *at least one* rule).
(ii) *Second presupposition*: presupposition of *non-idionomicity* (of *anidionomicity*). The second presupposition is that the action *is not idionomic* (the action is *not idionomic* if, and only if, the agent follows a *maximum of one* rule; if, and only if, none of the behaviours through which the action is carried out, follows its own rule, a rule that is specific to it).

2 The thesis formulated by A.G. Conte (1976 [1995]) on the relationships between *rules* and *regularities* (every *regularity* is necessarily one; a *rule* can be one and twofold) is only outwardly similar to the thesis formulated by R. Brown (1973, p. 98), on the relationships between *rules* and *laws*: "Two existing *rules* can be incompatible, whereas two *laws* cannot both hold".
Robert Brown's theory appears to be a *truth of reason* (a "*vérité de raison*"); but it is a *falsehood of fact.* In fact, it is false [to assert] that *all* rules are liable to contradiction (that they are possible terms of an antinomy): there are rules (eidetic-constitutive rules, and noetic-constitutive rules) among which contradiction (antinomy) is not possible. In fact, as A.G. Conte has demonstrated, eidetic-constitutive rules (and noetic-constitutive rules) are indeed "rules", but, like the "laws" of Robert Brown, they are not susceptible to contradiction (they do not admit antinomy).
The impossibility of antinomy (an impossibility that exists in eidetic-constitutive rules and noetic-constitutive rules) does not exist, generically, for all the types of constitutive rules (constitutive rules are those which either *are a condition* of what they are rule of, or *set a condition* of what they are the rule of). On the contrary: for the other four types of constitutive rules (thetic-constitutive rules, anankastic-constitutive rules, metathetic-constitutive rules and nomic-constitutive rules) antinomy is possible. On the conditions for antinomy between constitutive rules see Azzoni (1988).

2.1.1.2.3.2. These are two presuppositions of the question of which rule the action follows. Now, from the mere observation of the action, it is *neither* possible to infer whether the first presupposition is satisfied, *nor* whether the second presupposition is satisfied. For neither of the two presuppositions can one decide, by merely observing the action, whether the presupposition is satisfied. In other words: by merely observing the action, it is not possible to infer whether the action is not anomic (whether it is ananomic), nor whether the action is not idionomic (whether it is anidionomic)[3].

2.1.1.3. By referring to *Codici deontici* (Conte 1976 [1995]) in an original way, Alberto Febbrajo (1979) thus interprets the distinction (made by Geiger) between adeontic regularity and deontic regularity, between "*faktische Regelhaftigkeit*" and "*sozial geforderte Regelmäßigkeit*":

(i) adeontic *Regelhaftigkeit* is *to continue in* a *regularity*;
(ii) deontic *Regelmäßigkeit* is *to follow* a *rule*[4].

2.1.2. Second Paradigm: Norm *vs.* Deontic Sentence

The terms of *the second of Geiger's three paradigms* are two types of deontic entities:

(i) norm ("*Norm*");
(ii) deontic sentence ("*Normsatz*").

Geiger's thesis on the relationship between *Norm* and *Normsatz* is articulated in two subtheses. The *first subthesis* concerns the relationships between the intension (*Intension*, *intension, intensione*) of the term '*Norm*' and the intension of the term '*Normsatz*'.
The *second subthesis* concerns the relationships between the extension (*Extension*, *extension*, *estensione*) of the term '*Norm*' and the extension of the term '*Normsatz*'. Both subtheses are significant, both for deontics and for metadeontics.

2.1.2.1. First Subthesis: '*Norm*' and '*Normsatz*' are not Synonymous

The terms '*Norm*' and '*Normsatz*' do not have the same *intension.*
Geiger denies the fact that the term '*Norm*' and the term '*Normsatz*' are synonyms.

3 A brief comment on the glossary I used. The adjective 'idionomic', and the noun 'idionomy', are terms that I have coined myself. The etymon is clear: the Greek noun '*nómos*' (corresponding to the English 'rule' and to the Italian '*regola*') and the Greek adjective '*ídios*' (equivalent to the English 'one's own', 'pertaining to oneself', to the Italian '*proprio*', to the German '*eigen*'). And, clearly, 'ananomic' and 'ananomy', on the one hand, and 'anidionomic' and 'anidionomy' on the other hand (four terms formed by the addition of an *alpha privativum* prefix) are also neologisms of mine.

4 Geiger's distinction between adeontic regularity and deontic regularity is a distinction between two types of *regularities.* We must separate this distinction from another distinction (formulated by von Hayek, 1982, pp. 78-79) which is no longer between two types of *regularities*, but between two types of *rules*:
(i) adeontic "descriptive rules which assert the regular recurrence of certain sequences of events (including human actions)";
(ii) deontic "normative rules that state that such sequences 'ought' to take place".
Being deontic, or, respectively, adeontic, are, in Geiger, *regularities*; in Hayek, *rules.*
In other terms: in Geiger, 'deontic' and 'adeontic' are predicates of *regularities*; in Hayek, on the other hand, deonticity and adeonticity are predicated not of *regularities*, but of *rules.*

2.1.2.2. Second Subthesis: Non-bijective Correspondence between the Set of *Normen* and the Set of *Normsätze*

The term '*Norm*' and the term '*Normsatz*' do not have the same *extension.*
Geiger denies that there is a bijective correspondence between the set of *Normen* and the set of *Normsätze*. In particular: the presence of the deontic sentence ("*Normsatz*") is, for Geiger, *neither* a *necessary* condition, *nor* a *sufficient* condition for a *Norm* to exist.

2.1.2.2.1. *Firstly*, the presence of a *Normsatz* is not, for Geiger, a necessary condition (*notwendige Bedingung*, *condition nécessaire*, *condizione necessaria*) for a *Norm* to exist.
Geiger explicitly asserts that "the norm itself [*die Norm selbst*], may even exist without the linguistic shell [*sprachliche Hülle*] of the sentence": "die Norm selbst auch ohne die sprachliche Hülle des Satzes bestehen kann"[5].

2.1.2.2.2. *Secondly*, the presence of a *Normsatz* is not, for Gieger, a sufficient condition (*hinreichende Bedingung*, *condition suffisante*, *condizione sufficiente*) for a *Norm* to exist.
Geiger explicitly states that "[not] every sentence with the grammatical form of a deontic sentence [has] a corresponding subsistent norm": "nicht jeder Aussage von der grammatischen Form des Normsatzes eine subsistente Norm entspricht"[6].
In other words: "Not every sentence in the form of a verbal norm [...] contains a norm": "Nicht jeder Satz von der äußeren Gestalt der Wortnorm enthält [...] eine Norm"[7].

2.1.3. Third Paradigm: Proclamative Deontic Sentence *vs.* Declarative Deontic Sentence

The terms of the *third and last of Geiger's three paradigms* are two types of nomothetic deontic sentences, two species of *Normsätze*:

(i) proclamative deontic sentences ("*proklamative Normsätze*");
(ii) declarative deontic sentences ("*deklarative Normsätze*").

2.1.3.1. Proclamative Deontic Sentence

The proclamative deontic sentence ("*proklamativer Normsatz*") is the *Normsatz* through which a *Norm* is thetically enacted ("*statuiert*"), introduced ("*eingeführt*"), *created* ("*geschafft*")[8].

2.1.3.2. Declarative Deontic Sentence

The declarative deontic sentence ("*deklarativer Normsatz*") is, on the other hand, the *Normsatz* which ascertains ("*konstatiert*", "*stellt fest*": in Geiger, both the Germanic verb '*feststellen*', and the Gallicism '*Konstatieren*' occur) the subsistence ("*das Bestehen*") of a "subsistent norm", and carries out a nomothetic codification of this "*subsistente Norm*"[9].

5 Geiger 1969, p. 47 (translation modified); 1987, p. 25. [Editors' note]
6 Geiger 1969, p. 47 (translation modified); 1987, p. 25. [Editors' note]
7 Geiger 1969, p. 47 (translation modified); 1987, p. 25. [Editors' note]
8 Cf. Geiger 1969, p. 45; 1987, p. 22. [Editors' note]
9 Both '*feststellen*', and '*konstatieren*' are factive verbs (*faktive Verben*, *verbes factifs*, *verbi fattivi*), that is, verbs in which the truth of the following *that*-clause is presupposed (*präsupponiert*). On factivity, cf. Kiparsky and Kiparsky 1970. On the relationships between factivity and theticity, see Conte 1977a; 1977b [1995].

2.1.3.2.1. Geiger formulates the *deontic hermaphroditism* of the *deklarative Normsätze* in a multitude of ways.

2.1.3.2.1.1. A declarative deontic sentence *ascertains* the subsistence of a subsistent norm ("*konstatiert das Bestehen einer subsistenten Norm*") and *validates* a widespread model of behaviour (an "*eingespieltes Gebarensmodell*").

2.1.3.2.1.2. The declarative deontic sentence ("*deklarativer Normsatz*") is an expression and a consolidation of the subsistent norm. Within it, the subsistent norm is expressed and consolidated ("*ausgedrückt und verfestigt*"), or (as Geiger evocatively writes) captured ("*eingefangen*": "eine [...] subsistente Norm in einem deklarativen Normsatz eingefangen wird")[10,11].

2.1.3.2.2. It is philosophically provocative that Geiger not only recognises the otherness of the *Norm* with respect to the *Normsatz* and the non-correlativity between *Normen* and *Normsätze*, but goes so far as to declare that the subsistent norm ("*subsistente Norm*") is the norm in the proper sense ("*Norm im eigentlichen Sinn*")[12].

2.2. Formulation of the Paradox

2.2.1. *Deklarativer Normsatz*, declarative deontic sentence: this concept (which is pivotal in Geiger's thought) may appear to be a paradoxical, *self-contradictory* concept (just as its opposite, the concept of *proclamative* deontic sentence, *proklamativer Normsatz*, may symmetrically appear to be *tautological*).

2.2.2. Indeed, within the concept of *deklarativer Normsatz* two incompatible traits seem to coexist (two *notae*, two *Merkmale)*: the *theticity* trait and the *rheticity* trait[13].
A *deklarativer Normsatz* seems to be rhetic, and thetic, simultaneously:

(i) *rhetic*, insofar as it is a (rhetic) *ascertainment* of deontic validity;
(ii) *thetic*, insofar as it is a (thetic) *constitution* of deontic validity.

2.3. Mediation of the Paradox

2.3.1. Actually, there is no paradox in the concept of *deklarativer Normsatz*. The apparent paradox in the concept of *deklarativer Normsatz* dissolves immediately if one recognises the distinction between *thetic* deontic validity and *athetic* deontic validity, a distinction which here reveals its own heuristic fruitfulness.

2.3.2. It is *true* that a *deklarativer Normsatz* is both ascertainment (*Feststellung*) and constitution (*Festsetzung*) of deontic validity.

10 Geiger 1987, p. 151. [Editors' note]
11 A brief comment on the verb used by Geiger, '*verfestigen*', which is the equivalent of the English 'consolidate' and the Italian '*consolidare*'. As both G. M. Azzoni and Paolo di Lucia have pointed out to me, an Italian noun deriving from '*consolidare*', namely 'consolidazione' (consolidation), is a *terminus technicus* used by legal historians. Cf. for example, Viora 1967.
12 Cf. Geiger (1947 [1987, p. 20]): "norm in the strict sense or subsistent norm [*Norm in eigentlichen Sinn oder subsistent*[*e*] *Norm*]".
13 Cf. Conte 1977a; 1977b [1995]; 1985.

But it is *false* that, in a *deklarativer Normsatz*, the object of ascertainment and constitution (of rhetic *Feststellung* and of thetic *Festsetzung*) is *one and the same* deontic validity.
A *deklarativer Normsatz* is

(i) the ascertainment of *athetic* deontic validity,
(ii) the constitution of *thetic* deontic validity.

3. Deontic Sentences, Adeontic Sentences on Validity, Deontic Logic

3.1. Deontic Declarative Sentence *vs.* Adeontic Sentence on Validity

3.1.1. A brief warning about what the deontic declarative sentences ("*deklarative Normsätze*") by Theodor Geiger *are not*.

3.1.1.1. Contrarily to what the adjective '*deklarativ*' suggests, Geigerian *deklarative Normsätze* are (not: *descriptive of validity*, but) *constitutive of validity*. (The phrase 'constitutive of validity' already occurs in Conte 1970 [1995]).
Declarativeness in Geiger *is not descriptivity*: *deklarative Normsätze are not descriptive* sentences (be they deontic or adeontic sentences) *on validity* (on one of the six species of deontic validity represented on the vertices of the deontic octahedron in Conte, 1988 [1995]).

3.1.1.2. Therefore, the concept (developed by Theodor Geiger) of *deklarativer Normsatz* coincides neither with the concept (developed by Hans Kelsen) of *Sollsatz*, nor with the concept (developed in Conte, 1970 [1995]) of descriptive deontic sentence, nor with the concept (developed by Ingemar Hedenius, *Om rätt och moral*, 1941) of unauthentic legal sentence (in Swedish, *oäkta rättssats*).

3.2. Adeontic Sentences on Deontic Validity

3.2.1. This brief warning about what Geigerian declarative deontic sentences ("*deklarative Normsätze*") are *not* (i.e. they are *not descriptive* sentences *on validity*), fatally raises a *question*.
What is the semiotic status of *descriptive sentences on validity* (a set of sentences to which declarative deontic sentences do *not* belong)?

3.2.2. An *answer* to the question "what is the semiotic status of descriptive sentences on validity?" is provided in an essay written in January 1963: Amedeo G. Conte, *La negazione di norme*. According to this essay, a descriptive sentence on validity is a non-deontic sentence, an adeontic sentence.
A descriptive sentence on validity (I thus argued, contaminating two languages and freely alternating German terms and Italian terms) is a "*Satz* on the *Sollen*" and not a "*Satz* of *Sollen*". As a sentence not of *Sollen*, but *on the Sollen*, a descriptive sentence on validity is an "amodal" sentence (*amodaler Satz*, *énoncé amodal*, *enunciato amodale*). A descriptive sentence on validity is (I use a neologism of mine from 1986: 'adeontico') an *adeontic* sentence (*adeontischer Satz*, *énoncé adéontique*, *enunciato adeontico*)[14].

14 From my distinction between *deontic* sentences and adeontic *sentences* on validity, one can make the distinction (also formulated in 1963) between modal interpretation and factual *interpretation* of deontic sentences ("*norm sentences*"). This recurs in a Swedish-speaking Finnish philosopher: Stenius (1963).
The analogy between the two distinctions is merely apparent. Indeed, what Stenius distinguishes is not two types *of sentence, but* two types of *interpretations of sentences.*
In other words: in Stenius, "*modal" and "factual"* are predicates of *interpretations* of sentences, and not of *sentences.*

3.3. Deontic Logic, Logic of Deontic Sentences, Logic of Adeontic Sentences on Validity

The thesis (which I formulated in 1963) on the *adeonticity* of descriptive sentences on validity has direct consequences both for *deontics* and for *metadeontics*. These consequences are pointed out by both Giampaolo M. Azzoni and Paolo Di Lucia.
If descriptive sentences about validity are *adeontic*, it is to be excluded that the logic of such *adeontic* sentences be a logic of *deontic* sentences.
Consequently, every deontic logic that is configured as a logic of deontic *sentences* (precisely because it is constructed as a logic of *deontic* sentences) is not a logic of *adeontic* descriptive sentences on validity.

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* * *

And in yet other words: in Stenius, it is not the sentences that are modal (or, respectively, amodal), but the interpretations of sentences. At the root of Stenius' theory, and of a similar theory from Georg Henrik von Wright also dating back to 1963 (G.H. von Wright 1963) is, according to the testimony of Stenius himself (and von Wright), a book by the Swedish philosopher Ingemar Hedenius (1941): *äkta rattssats vs. oäkta rattssats*, authentic legal sentence *vs.* inauthentic legal sentence.
A curiosum: in 1963, both Stenius and von Wright, and (secondarily) Conte had already been in contact with the work of Ludwig Wittgenstein, for various reasons (and on various levels).

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PATRIZIO LO PRESTI
Department of Philosophy, Lund University
Patrizio.Lo_Presti@fil.lu.se

CONCEPTUAL CONFUSIONS AND CAUSAL DYNAMICS

abstract

This paper argues that rules and norms are conceptually distinct: what is norm is not thereby rule, and vice versa. Versions of conflating the two are discussed and an argument for distinction given. Two objections to the argument are responded to. It is accepted that rules and norms are often intimately related. They are so causally, not conceptually: what norms we live by can make a difference to what rules we accept and what rules we accept can make a difference to what norms we live by. This is a social, dynamic and continuous causal process of development of the social practices of community.

keywords

norms, rules, social practice, causal dynamics, know-how

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1. Introduction: The Rule-Norm Conflation

I (Lo Presti 2016a/b) and Ingar Brinck (2014, p. 742; 2015) have argued that rules and norms are conceptually distinct. What I call "the rule-norm conflation" is that the concepts *rule* and *norm* are co-extensive. We argue that they are not. I also argue that knowledge of rules is not thereby knowledge of norms, and vice versa, and acting according either is not thereby acting according to the other (cf. Heras-Escribano & de Pinedo 2015; Heras Escribano et al. 2015).

The structure of the paper is as follows. In this section I give examples of the rule-norm conflation and traditional arguments against it. In the next I develop my argument, that rules are linguistic codifications of norms and norms are standards implicit in practice, such that rules are not, as such, norms, and vice versa. The third section answers two objections. In the fourth section I argue that rules and norms are nevertheless intimately related: norms we live by can influence what rules we formulate and rules we formulate influence what norms we live by. In the fifth concluding section I discuss consequences for methodology in social science, and the epistemology of knowing norms and rules and how to act accordingly.

The rule-norm conflation is evident in contemporary philosophically (mis-)informed interdisciplinary research. For instance, I (Lo Presti 2016a, pp. 6-7) and Brinck (2014, pp. 737-745; 2015, sects. 1-4) observe it in the pretense play-paradigm in developmental psychology (Rakoczy 2006; Rakoczy et al. 2008), which is devoted to investigating pre-linguistic children's understanding of social norms. The experiments codify *norms* in terms of John Searle's (1969; 1995) concept of *constitutive rules*. Constitutive rules define what is part of a practice – e.g., moving a chess piece in a particular way. In that sense, constitutive rules are *descriptive*, not themselves normative (cf. Glüer & Wikforss 2009; Searle 1969, p. 41). In the context of definitions constitutive rules give, what is correct – e.g., to be polite – is unanswered. Regulative rules, in contrast, regulate behavior – e.g., to be polite in the context of a game. Brinck asks how experimental data should be interpreted (2014; 2015). Understanding *norms* is what is meant to be tried. I argue that what is really tried for is (pre-linguistic) understanding of descriptions of games, not of what one *should (not)* or *ought (not)* do in the context of games described.

Instances of the rule-norm conflation are found also in recent contributions to social philosophy. One is Giacomo Sillari's. When discussing rules, customs, and conventions, he suggests that if something is norm it is a rule: preferences and beliefs "form a convention, which has some degree of normative force, hence is a *rule*" (2013, p. 882). Maurizo Ferraris also seems to conflate the two. He argues that recordings (material elements playing the functional role of memory) form a necessary "empirical background for constitutive rules,"

and that "recording [...] is the principle underlying social normativity as a whole" (2018, p. 90). I agree that norms are more fundamental than rules. But if Ferraris means that the principle underlying normativity and the principle underlying (constitutive) rules is the same, in the sense that if you have norms you also have rules, the argument in this paper opposes it.
In our modern philosophical tradition, Wittgenstein and Ryle argued that knowing how to act correctly is not knowing that rules apply. Theirs are regress-arguments against correctness being determined by rules (Wittgenstein's "rule-following paradox," 1953, §201) and against knowing how to act correctly being knowledge that rules apply (Ryle's "intellectualist legend," 1949/2009, pp. 21-23).
Closer to our times, Robert Brandom devotes much of his philosophical corpora to argue that normativity should not be construed according to what he calls *regulism*, the thesis that norms are propositionally explicit structures (e.g., 1994, ch. 1, sect. III). Brandom wants us to think of normativity as constituted in second-person engagements in social practices, in which people implicitly (i.e., without having to know or say *that* they do so) take each other to commit and entitle to further acts, sayings, believings (2000, pp. 80-82). If they have a language expressively powerful enough to *talk about* what they must *already know how to do* to institute norms can they *say* or *think that* something is norm (Brandom 2008). Importantly, the latter is not necessary for normativity. Normativity requires an implicit, reciprocal, treating each other as committed and entitled. Norms implicit in practice should not be confused with normative vocabulary with which we (try to) make norms explicit (Lo Presti 2017).
Though I distinguish rules and norms in a way he does not, I thus agree with Guala, that "New rules may be created by an influential group, for example" but "they may also emerge and evolve autonomously, without anyone in particular planning or foreseeing their effects" (2016, pp. 6-7) – nor, for that matter, planning or foreseeing that they evolve.
That was the background. I next present the "neither overlap-nor implication" (NeNo) argument. In a later section I argue that rules and norms often interact in dynamic ways.

2. The Neither Overlap-Nor Implication Argument

We can represent the conceptual categories of norms (N) and rules (R) diagrammatically. The picture I argue for is this:

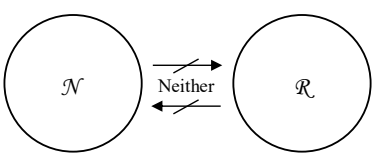

Fig. 1. The non-overlapping argument

Strikethrough arrows indicate that membership in N is not conceptually implied by membership in R , and vice versa. That is not to deny that members in either can become members in the other. But no behavior (linguistic or otherwise) is norm in virtue of being a rule, and vice versa.
I argue against any image of the two categories according to which either (a) they are co-extensive, (b) they partially overlap, or (c) they do not overlap but membership in either implies membership in the other, represented as follows:

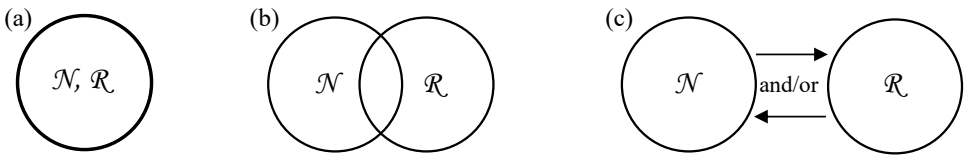

Fig. 2. Versions of the rule-norm conflation

The three are versions of the rule-norm conflation. (a) is co-extensiveness: *all rules are norms*, and vice versa (categorical identity); (b) is partial overlap: s*ome norms are rules*, and vice versa (categorical overlap); and in (c) *membership in either category implies membership in the other*, and/or vice versa (categorical distinction with conceptual implication).[1]

To initiate the argument, consider some behavior that, in the context of social practices of a community, is regulated. Think of a regulation against littering. If you litter, you may incur social and even legal sanctions. 2(a) and 2(b) says that littering occupies (negatively valued) membership in the category of norms; it is a norm not to litter *in virtue of* being regulated against, while (c) says that it being a rule implies that it is also norm. I take this to be mistaken (cf. Lo Presti 2016a, pp. 8-9). To illustrate, consider a process of norms being instituted in the community.

Suppose the littering-regulation is an edict issued by some sanitation-authorities (expressed "Do not litter!"). It is possible that people (perhaps everyone) ignore such regulations. They do not take littering to be incorrect or something not to be done – though they might. If they do not, the rule has no *normative force*: people do not take it to be incorrect to litter. This can be for several reasons. It is not necessary that people explicitly think that the rule should not be followed. It might simply be that they do not in practice follow it and, for that reason, it has no normative force (cf. Guala 2016, p. 17). Implicitly, they accept littering. It does not matter for the argument why normative force does not catch on.

What is important is that it is possible to distinguish what rules say from what people take to be correct in the context of their practices. We can have rules that, without ceasing to be rules, do not have normative force; and we can have norms that, without ceasing to have normative force, are not made explicit as rules.

A conceptual space is then opened between saying and doing. In that space, the claim that rules and norms are conceptually and categorially distinct is clearer. It is a distinction between *force* (instituted in *doings*) and *content* (expressed in *sayings*). In order for the rule (e.g., "Do not litter!") to have force (people disfavor and perhaps cease littering) it must be taken to be correct in the context of the community. Rules are, in this scheme, content-representing (*what* is to have force). As such, rules can fail to have the force represented.

The point is that force in doing and content in saying are separate. It is possible that what is said to be norm is not norm, and what is norm not be said to be.

Other examples are begging, biking in a park, listening to loud music, spitting, queuing, etc. These may all be regulated yet people (implicitly in action or explicitly in saying so) take the regulation not to have force. For instance, 20$ bills may count, legally, to give owners right to purchase goods, yet in the practices of a community not be taken to give that right (have that force). Moreover, it might be norm to violate rules. For instance, in a community with rules against smuggling, people buy smuggled goods and take it to be correct to do so. Hence,

1 (c) seems to be present in Christina Bicchieri's definition of social norms (2006, p. 11) and in Sillari (2013), as argued above. This also seems to true of the developmental psychology-literature, which follows Searle, though it is not clear whether it is Searle, or his interpreters, who is responsible for the conflation.

not only are sayings what to do and normative force implicitly instituted in doing separate; they can also conflict. People break rules with an aim to establish counter-normative force, to deteriorate what is *said* is correct by *making* something else correct. Activism works this way. To put it concisely, the neither overlap-nor implication (NeNo) argument is this:

(1) Some behaviors are regulated by rules, and some behaviors are norm.
(2) Rules represent contents saying what is (in-)correct, and normative force is instituted in practice by treating something as (in-)correct.
(3) From (1) and (2): Rules must gain force to be norms; they can, and they can fail.
(4) From (1) and (2): Norms must be expressed to be rules; they might, and might not be.
(5) From (3) and (4): Something can be a rule without being norm, and vice versa.

Hence: Rules and norms neither overlap nor imply each other.

Next I consider two objections to the argument: first, that my understanding of rules is question-begging; second, that rules as sayings are also doings, why the force of norms in doings is not distinct from the force of rules.

3. Objections: Rules Implicit in Practice, and Rules as Doings

The first objection to the NeNo-argument is that rules may be implicit in practice the way I say norms are. If so, they cannot be distinguished as above.

I respond that if rules are construed as implicit in practice the way I argue that norms are, then the category of linguistic or otherwise content-representing expressions of what is (to be) correct is empty. What then, according to the objection, takes the place of rules in the NeNo-scheme? An answer could be: *expressions* of rules, while *rules* are implicit in practice.

In response, I ask what rules stripped of content-expressing form are supposed to be. It is one thing to say that people implicitly *take some behavior to be norm*. It is quite another to say that people implicitly *take it be to norm according to a rule*. In the latter, but not the former, normative force is taken to be derived *from something else*. I argue, to keep our conceptual books straight, that rules play the role of that "something else," though rules *can be* implicit. Searle's notion of rule-following (1983) suggests the latter. He says that we learn rules which, once learned, can become implicit in practice (as 'Background' knowledge; a pre-intentional capacity to know what to do). I need not disagree. I argue only that not all rules become implicit in practice, that they need not do so to be rules, and that norms implicit in practice do not presuppose rules.

To my mind, Searle misses the sense in which something can have normative force without *ever* being represented. For illustration, a theoretically-minded coach in some sport, or a cookbook author, can know rules according to which something is correct yet be unable *to practice* the sport or *to cook* (as opposed to being able to *speak about* it). The expert practitioner, in contrast, can be unable to represent the rules, without thereby being merely lucky or less professional (cf. Brinck 1999; Tanney 2011).

Thus, although it is possible to develop expertise by learning rules and then practicing, that procedure is not necessary for expertise. One can learn to act normatively correct (or successfully, e.g., in sports) by practice and never consider rules.

The second objection to the NeNo-argument is that rules are also doings (*sayings* that something is correct). Hence the distinction between norms, instituted in doings, from rules, expressed in sayings, collapses, because rules are also doings. I give two answers. First, I distinguish the force of speech-acts from their content; second, I distinguish speech-acts made according to norms from their being, or being made according to, rules.

First, the objection confuses sayings with what sayings do. Saying that something is correct is a doing. But the saying and it's force are distinct. Sayings express some content, while their

force is the expressing's practical consequences. Saying "Do not litter!" *can* have the force of making people litter less, but it can also fail. In contrast, the *force* of the saying, e.g., that people litter less, cannot fail to have that force (if people litter less because of it, it has force already). In this context, the NeNo-argument is that normative force does not presuppose sayings, even if sayings are doings. Something can be norm without being the result of, or deriving force from, linguistic doings.

It is denied neither that rules can have normative force (and often do so) nor that norms can become expressed as rules (and often are). But that something is norm does not imply that it is or has been, or ever will be, a rule. Conversely, that something is a rule does not imply that it is or has been, or ever will be, norm.

A response to this may be that speech-acts are doings *made according to norms* and therefore *can be* rules.[2] To anticipate, in the next section I argue that norms can become rules, and vice versa, under the right circumstances. In the present context, the NeNo-argument is simply that expressing or being either neither is nor implies expressing or being the other. To grant that speech-acts are *made according to norms* is not to grant that they *are* or are *made according to rules*. Even if it is granted that rule-expressing speech-acts are, or are made according to, norms it is not thereby granted that they are, or are made according to, rules. Indeed, even if it *in fact always* is the case that *A* (e.g., *A* = speech-act) stands in relation *r* (e.g., *r* = accords with) to N, where some N can be R , that *Ar*N settles neither that *A is* N or R , nor that *Ar*R .

The responses to the objections push for conceptual clarity. Granting that rule-expressions are doings and that rules therefore, like norms, depend on (linguistic) doings, leaves the category of rules, in my scheme, empty. The cost is lost conceptual clarity. Suppose we ask what kind of standard makes something correct, in a scheme collapsing norms and rules into one category. The answer could only be "a rule and a norm." My scheme allows subtler distinctions; it might be because of a rule, and it might be because of a norm, and it might be because of one but not the other.

The NeNo-argument does not close all thinkable venues to re-assimilation. But a fast lane to rule-norm conflation is closed. In the next section I argue that norms and rules nevertheless are intimately related in the dynamic evolution of social practice.

4. Dynamic Causal Co-Involvement: Together Again

The rule-norm conflation is conceptual: being a rule is not sufficient for being a norm, and/or vice versa. The NeNo-argument is directed against that *conceptual* collapse. But the argument does not show that rules and norms cannot interact in other perhaps intricate ways. That norms and rules are conceptually distinct does not preclude that they *causally* influence each other (Lo Presti 2016a, pp. 6-9). Smoking and cancer are conceptually distinct but one seems to causally influence the other. I now argue that rules and norms are involved in a relation of dynamic causal co-influence.

The pragmatic significance of rule-expressing speech-acts is, typically, either to impose normative structure (Searle 1995; 2010) on naturally occurring practices – i.e., ones not previously regulated – which may or may not already have norms associated, or to make norms already implicit in practice explicit (Brandom 1994; 2000; cf. Lo Presti 2016b). Together, this dual significance implicate rules and norms in an intimate dynamic relation in our ways of life. To illustrate, re-consider Searle's distinction. Some behaviors are regulated by rules while other rules create opportunities for action in the context of some social practice (Searle 2015; for overview, see Hindriks & Guala 2015a). Thus littering can be codified as inappropriate or incorrect in regulative rules (expressed by, e.g., signposts ministered by sanitation

2 This response was suggested by a reviewer at *Phenomenology and Mind*.

authorities). In contrast, the constitutive rules of chess says what one must to do play the game. They make novel actions possible (e.g., checkmate and tournaments). Violations of regulative rules can be responded to with "you act incorrectly," while violations of constitutive rules can be responded to with "you are doing something different."
The distinction highlights different ways rules can change behavior and make a difference to norms in practices they are associated with. Thus, if some fashion authority says, "Bank employees should wear neckties at work" (regulative rule), this may – or may not – make bank employees wear neckties at work. Given the authority of the speaker, bank employees worry that if they do not act accordingly people will think unfavorably of them. This is not a constitutive rule because failing to wear a necktie at work does not mean that one is not acting as a bank employee. Not having a work-contract, in contrast, may be to *not be* a bank employee (cf. Brinck 2015, p. 708). On the other hand, a child playing with chess pieces, trying to do what adults do – play a game – can be told what rules constitute the game. This may – or may not – make the child behave differently and start to play chess. This is not a regulative rule because failing to play by the rules is not bad or inappropriate in the sense that spitting on the board is. Rather, it is doing something different (ibid.).
These are no mysteries. Acting differently can be a consequence of being told what to do. Words make a difference to the world and to what we do (Guala 2016, p. 54; Millikan 2014). The reverse is also true. A consequence of implicitly taking something to be correct can be saying that it is, or is to be recognized to be, so. This is to approach the rule-norm dynamics from a different, roughly Brandomian direction (e.g., 2000, pp. 89, 91-92; 2009, pp. 13, 17). Something is implicitly taken in practice to be the way one ought to act and then – maybe – it is codified and made explicit as a rule. For instance, we take it to be inappropriate to litter. Perhaps we never explicitly reflect on it but littering-behavior tends to provoke social sanctions. If the force of the non-littering norm is strong or important enough (we not only treat deviation as inappropriate but as infuriating) it can reach the Searlean level "from below" as it were. It becomes expressed and codified as regulative of a practice (cf. Brandom 2000, p. 4).
This is no mystery either. We take behaving correctly (according to implicit standards) in some context to be important enough to deserve elevation to the status of rule, perhaps even law, so that we can tell others about it and be entitled to punish deviation. Our doings thus make us say things about what we do, or what to do, which in turn can make a difference to our doings. This is often the pragmatic point of rule-expressions (cf. Brandom 2008, pp. 114-116).
I am describing a *dynamic causal co-involvement* of conceptually distinct rules and norms. Expressions of rules can have normative force; change our practices. Conversely, norms implicit in practice can gain the status of rules; change what we say about what we do, and what to do (Brinck 2015). If so, rules and norms have a potential to continuously causally interact: changing in response to each other. To put it more exactly, doings and what sayings do causally interact. They continuously, implicitly and explicitly, shape and re-shape social practices and their evolution (Brinck 2014). This is a *contingent causal*, not *conceptual*, relation. The causal co-involvement again obviates a conceptual difference between norms and rules. One of the things we *do* in expressing rules is (attempt) to impose normative structure – to "make static" what is or is to be taken to be correct (Lo Presti 2016a). What we implicitly do in practice, on the other hand, is institute normative force – in a sense, to influence norms and rules (though we need not know, say, or intend *that*). Thus we can talk of rule-expressions as attempts to structure social practices and of normative force as causally influencing such structures "from the inside." (Constitutive rules can build boxes, defining social practices, and regulative rules can regulate boxed-in behavior, but all doings has the capacity to break or

solidify boxes, as it were. And, to repeat a previous point, doings may institute norms where no rule applies; there need not be boxes for there to be norms.)
The argument in this section has been that, despite their conceptual distinctiveness, norms and rules are intimate in the causal dynamics whereby they, respectively, are instituted, or expressed and imposed. To expand the diagram, I represent it

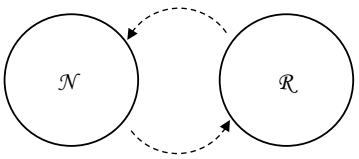

Fig. 3. Dynamic causal co-involvement

where dashed arrows symbolize causal relations.
To emphasize the dynamicity of the rule-norm relation: strictly speaking, it is always incorrect to say that what is norm in the context of some social practice is fixed between instants of its development (cf. Lo Presti 2015, pp. 17-19, 45; Thompson 2007, pp. 38-43). Behavior at any instant in the context of any social practice, possibly but not necessarily in conjunction with rules, has a potential to change what will be norm at later instants. Thus I agree with Wittgenstein that no interpretation of a rule for some practice determines what is or will be correct (1953, §§198-201). Rules are not 'rails ... laid to infinity' (ibid., §218).
Somewhat differently, I have argued that *no rule is needed* for normativity and that rules can be *irrelevant* for what is or becomes norm. Our acting according to norms can, indeed, be 'blind' (ibid., §219) in the sense that we need never say or know that something is "'obeying the rule' or 'going against it'" (ibid., §201) in order for it nevertheless to be norm (cf. Sillari 2013, pp. 878, 885). Indeed, even if we *can* express rules, rule-expressings are themselves mere instants in the dynamics of norm-development.
I also argue that norms are *social* for broadly Wittgensteinean reasons. If it were up to individuals privately to decide what is norm then whatever individuals privately take to be norm would be norm (1953, §202). But one cannot privately institute norms; it takes a practice of *socially taking* something to be norm. One cannot make hitting the first person one sees in the street every morning correct by deciding that it is. Else speaking of norms, correctness and incorrectness, would make no sense. Different social perspectives provide a friction necessary for the issue of correctness to be an issue. Thus, individuals may vanish from a community without it's norms vanishing. But if the community vanishes so does it's norms – it's "way of life" (ibid., §241). Norms are, in this perspective, laid down in the dynamics of social practice (cf. Lo Presti 2016a, p. 9) – not stretched out once instituted. Brinck (2014, p. 745) suggests that norms are "interaction patterns, grounded in interpersonal relations".
In the closing section conclusions are drawn and consequences discussed. I point to consequences relevant for knowing how to act according to norms and rules, what it is to "have" norms and rules, and for methodology in social science.

5. Conclusions and Consequences

Norms and rules are distinct. They neither belong to the same conceptual category nor imply each other (the NeNo-argument). Yet rules can play a causal role for normative force, and norms can play a causal role for what rules are formulated. Whether particular rules and norms do so depends on whether rules are taken in practice to be appropriate, correct – do they have force? – and on whether people have the expressive resources to say what is or is to have normative force. The diagrammatic representation of this conclusion is

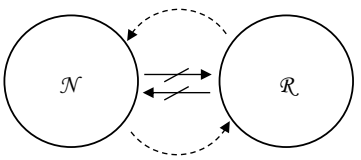

Fig. 4. Dynamic causal co-involvement with conceptual distinctiveness

where arrows symbolize as above.

Let's close by discussing two kinds of consequences. First, epistemological consequences concerning what it is to know rules or norms in the context of some practice, and how to act accordingly. This raises a question about what it means to "have" rules or norms, which has consequences for methodology in social science concerning, first, methodological individualism and, second, explanatory primacy of norms over rules in accounting for the evolution of institutions.

Beginning with epistemological consequences, knowing what rules and norms apply in the context of some practice are different kinds of knowledge, corresponding to the different categories the knowledge is about.

Knowing what norms apply is an implicit non-linguistic capacity, and the capacity to act accordingly is practical *know-how* (Ryle 1949/2009, pp. 18-20; Tanney 2009). It is a practical capacity mastered in *participation* (cf. De Jaegher & Di Paolo 2007; De Jaegher et al. 2010). The first reason for this is that norms are implicit in what we do and normative force implicitly instituted in social interaction. For this reason, learning norms and how to act accordingly requires participation in social interaction. The second reason is that since norms are potentially in continuous change as a consequence of doings in the context of social practice with which they are associated (Lo Presti 2016a), participation in social practice is necessary to learn norms in force at any instant of any developing social practice.

On the other hand, knowing what *rules* apply and how to act accordingly is akin to *knowledge that* (again, in Ryle's sense). A rule states *that* such-and-such is (to be taken to be) correct. So, knowing rules requires corresponding knowledge *that* (what rules state). Considering Searle's reasoning that rules can become implicit, knowing how to act according to rules can become implicit know-how. But, in contrast to knowledge of norms, knowledge of rules requires propositional knowledge (of what rules state). Importantly, knowing norms and how to act accordingly is primary. One can know and act according to norms in principle without knowing rules. As Heras-Escribano and de Pinedo have put it, "one does not master the technique of driving or playing football if one just knows what [rules are] written in a book. One should know how to do it" (2015, p. 6). In principle, then, a community without the expressive capacity to formulate rules could have and act according to norms.

The above reasoning leads us to ask what "having" rules and norms means. The socio-dynamic picture I have given implies that, strictly speaking, *no one* has rules or norms. They belong to no one but a community and it's practices. Norms are negotiated in the dynamics of social interaction. They cannot exist in individual minds or behavior (cf. Kripke 1982, p. 13). Rules, for their part, are represented in what the community takes to express what norms are (to be) in force. Hence neither norms nor rules can have individual owners, and no individual is or realizes their vehicles (Brandom 2004; Steiner 2014; Steiner & Stewart 2009).

So it seems that a *we* is required for normativity (cf. Brandom 1994, ch. 9; 2002, ch. 6 and 7; Brinck et al. 2017, p. 139). It is of course individual (inter-)actions that contributes to the norms of a community. I am not suggesting that a community is an *ontological* subject. To speak of community is rather to speak of a *de-ontology*, in the Hegelian sense that individuals reciprocally take each other to be bound to norms (fundamentally, commitments and

entitlements implicit in practice. Cf. ibid; Brinck & Balkenius 2018). The home of norms and rules is the dynamic deontology characterizing a *we*.

I now want to emphasize two consequences this has for methodology in social science. The first is that commitments to methodological individualism (Schumpeter 1908, pp. 88-98; Weber 1921/1988, p. 13) should be reconsidered (cf. Schmid 2008). Methodological, also known as explanatory, individualism states that individuals are basic units of account in explanations of agency, because only individuals have intentional states that play the role of premises in practical reasoning issuing in agency (for overview, see Epstein 2015, ch. 1-3).

From the point of view I have taken here, however, contents of individual intentional states are partly determined by norms. Norms enable individuals to conceive and intend novel actions. As argued by, e.g., Baker (2005; 2015) intentions, beliefs and desires about football, chess, ownership, vacation, citizenship, the economy, institutions, rules – all activity in the context of institutions – is possible *because of* deontological relations. If so, *individual* decisions, intentions, and actions in the context of most of our social practices presuppose norms. The individualist notion that norms reduce to facts about individuals then appears problematic. Norms cannot be privatized, in the sense of being individually "had." To explain why *any one* does one thing rather than another depends on understanding something about participation in community – a normative we.[3] This is potentially upsetting for entrenched methodological convictions in social science, especially methodological individualism.

I find Epstein to be essentially right, that "the contemporary consensus" on ontological individualism is mistaken (2015, pp. 36-37), though not for the reasons he gives.[4] On a deontological conception of sociality the ontological categorization of individual and collective subjects is not an issue. Of course, some *ones* must believe, desire, intend and act if collectives do so. The mistake is to conclude that for collectives to do so individuals (members, non-members or other material things) must *have* or *realize* certain properties – e.g. collective intentionality – while what matters for collectivity is rather socially recognized proprieties; i.e., norms had by no one.

The second methodological consequence for social science is explanatory priority with respect to rules and norms. Hindriks and Guala argue that "Different explanations [of the causes that govern the evolution of institutions] are legitimate at different levels of analysis, and we can zoom in and out depending on our explanatory goals" (2015b, p. 517). I agree, but add that normative dynamics in the context of community – the deontological we, not a "third party," as Guala seems to think (2016, p. 113) – must figure in explanations of the evolution of institutions. Normativity is the bedrock on which rules depend. Therefore, I also disagree with Hindriks and Guala, who say that normativity is "a small flea" (2015b, p. 518) in that it piggybacks on more fundamental elements – "big fleas" – required for institutions. Accepting the invitation to use metaphors, if – as philosophers new and old argue – normativity is fundamental for communication, not to mention agency and the capacity of intentionality in the sense of *being a unit of account*, then normativity is rather "a bumblebee family" resembling

3 As pointed out by Epstein (2015, pp. 13-14), a typical caricature of non-individualism, like Hegel's (e.g., Searle 1995, p. 25), is as the idea that a collective is an ontological subject – a thing on top of or in addition to individuals. Instead, many serious non-individualists argue, and argue that Hegel argued, that collectives are *de-ontological* individuals; i.e., individuals in the *normative* realm of social *proprieties*, *not* in the *object* realm of *properties* (e.g., Brandom 2004; de Prado Salas & Zamora-Bonilla 2015; in press; Steiner 2014).

4 Epstein objects to ontological individualism that "even if member attitudes do *partially* ground group attitudes, member attitudes may not *fully* ground group attitudes" because there "might be other facts [e.g., historical, environmental, and facts about non-members] that also figure into the grounds of group attitudes" (2015, p. 216). He applies this argument also to group action (pp. 222, 235) and group intention (pp. 240-242).

the spreading of nectar required for institutions to develop. Metaphors aside, I am not arguing that "normativity requires constitutive rules," as Hindriks and Guala portray Searle to be arguing (ibid). I have rather argued that rules – any rules – require normativity, even though rules are not norms, and vice versa.

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ALEXANDER ALBERT JEUK
Independent Researcher
alexander.jeuk@gmail.com

CARE, SOCIAL PRACTICES AND NORMATIVITY. INNER STRUGGLE VERSUS PANGLOSSIAN RULE-FOLLOWING

abstract

Contrary to the popular assumption that linguistically mediated social practices constitute the normativity of action (Kiverstein and Rietveld, 2015; Rietveld, 2008a,b; Rietveld and Kiverstein, 2014), I argue that it is affective care for oneself and others that primarily constitutes this kind of normativity. I argue for my claim in two steps. First, using the method of cases I demonstrate that care accounts for the normativity of action, whereas social practices do not. Second, I show that a social practice account of the normativity of action has unwillingly authoritarian consequences in the sense that humans act only normatively if they follow social rules. I suggest that these authoritarian consequences are the result of an uncritical phenomenology of action and the fuzzy use of "normative". Accounting for the normativity of action with care entails a realistic picture of the struggle between what one cares for and often repressive social rules.

keywords

care, everyday human action, normativity, social practices, rule-following

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1. Introduction

Proponents of embodied cognition, following prominent phenomenologists, have come to appreciate the role that bodily abilities, embodied mechanisms, language and affective care play for the constitution of diverse kinds of normativity. They have developed accounts of normativity for animal cognition (Barandarian et al., 2009; Thompson, 2007; Thompson and Stapleton, 2009), ethics (Colombetti and Torrance, 2009; Urban, 2015), rationality (Gallagher, 2018) and everyday human action in general (Jeuk, 2017a, 2019; Kiverstein and Rietveld, 2015; Rietveld, 2008a,b; Rietveld and Kiverstein, 2014). And it is the last one, the normativity of human action, which I analyze in this paper.

I argue that care for oneself and others should be considered the main source of the normativity of everyday human actions, rather than linguistically mediated social practices. I establish my claim in contrast to Julian Kiverstein's and in particular Erik Rietveld's work. Their account, contrary to mine, emphasizes the importance of linguistically mediated social practices over care. I show that their account entails counterintuitive results if applied to several instances of everyday human action. I further show that the idea that social practices constitute the normativity of action has unwelcome ethical ramifications, if we switch our focus from idealized actions in the arts, in games and in professional sports to mundane instances of actions that are representative of the social reality of most humans.

2. Rietveld and Kiverstein on the Normativity of Everyday Actions

Rietveld and Kiverstein have put particular emphasis on the co-constitutive role of care—what they call "concern"—, bodily skill and language for the normativity of action (Kiverstein and Rietveld, 2015; Rietveld, 2008a,b; Rietveld and Kiverstein, 2014). They depart from the assumption that human and *non-human* animals can perform normative actions.

> The normative standards at work in animal behaviour are not conferred on the animal from the outside. These are standards that originate in the animal's practical understanding of the possibilities for action the material environment offers. Animals in exercising their abilities and skills are no less capable of refining and improving their grip on the environment, and in doing so they display sensitivity to whether their grip on the environment is better or worse. Some way of engaging with the environment can be better or worse relative to the activities in which animals belonging to a particular form of life take part. (Kiverstein and Rietveld, 2015, p. 719)

Animal actions exhibit normativity because they can be performed better or worse. Animals

can advance the skills that control their actions and they can recognize if they perform subpar. Rietveld and Kiverstein ascribe this potential for normative action, not unlike Dreyfus (2002), to what Merleau-Ponty has called the "grip on the environment". Importantly, animals are motivated to enhance their grip on the environment because they care for the consequences of successful actions.
Despite highlighting the centrality of care for the normativity of animal actions, Rietveld and Kiverstein state that the case varies in certain respects for humans, given their unique linguistic form of life.

> The human form of life is one that is heavily mediated by linguistic forms of communication, and questions of getting things right arise for humans with an interest in communicating about a shared sociomaterial world. (Kiverstein and Rietveld 2015, p. 719)

What concretely explains the normativity of everyday human actions—what Rietveld (2008) calls "situated normativity"—is the ability to follow linguistically mediated social human practices: "that one is reliably participating in a communal custom" (Rietveld, 2008b, p. 985). Rietveld ascribes this idea, like many other proponents of embodied cognition, to Wittgenstein, to whom I refer henceforth as "EC-Wittgenstein" (Embodied Cognition-Wittgenstein, i.e. how Wittgenstein is regularly interpreted by proponents of embodied cognition).[1]
Even though Rietveld argues that shared social practices are the primary source of normativity for human everyday actions, he still attributes a significant role to care.

> Situated and lived normativity presupposes embodied concerns. Once certain things matter to someone, one may be affectively influenced. These concerns operate at the level of the skillful body and immediately tie the individual to the normative order by producing appropriate affective behaviour. Note that experts typically care about the adequacy of the objects they produce. (Rietveld, 2008b, p. 993)

Rietveld argues for the existence of a complex feedback loop between care and linguistically mediated social practices. He argues, following Hobson (2004), that already children affectively care about the social feedback of others and therefore internalize socially shared practices. And in the process of adapting to, refining and performing normative actions, care plays a sustaining cause, in that care *compels* individuals to abide by social rules.[2]
Rietveld explains this process using the example of how an architect is skill-wise socialized in her community. An architect acquires skills and develops care for her craft through hard work and learning. She does so through the interaction with experts in her field, who are themselves standing in a social relationship to other experts in their field. The latter point is supposed to stress the wider social character of social practices, such as architecture. As

1 My aim in this paper is not to evaluate whether the idea that following social practices constitutes the normativity of action, in the way it is described by proponents of embodied cognition, is actually Wittgenstein's (Heras-Escribano and de Pinedo, 2016; Hutto, 2013; Loughlin, 2014; Rietveld, 2008b). I confine myself therefore here to describe how Wittgenstein is interpreted by proponents of embodied cognition which is also why I use the phrase "EC-Wittgenstein".
2 "Compelling" is a term that Rietveld constantly uses. To be charitable, he uses the term to explain the phenomenon of non-deliberative action that often has a compelling nature. Yet we will see that terms like "compelling" or "disciplining" can swiftly reveal the authoritarian undertones of social rule-following, depending on how we render the social context in which actions occur.

Rietveld claims:

> Due to all this largely *unobtrusive* and *unnoticed disciplining* of the body the architect has learned to see *what is right and what is not. She develops preferences and sensitivities along the lines of the examples set by these experts*. This way she develops a 'feeling' for the situation and the ability to assess, and if necessary to correct her own performance. (Rietveld, 2008b, p. 989, italics mine)

The idea here is that agents are re-directed towards social rules by means of careful discontent in case they unwillingly deviate from a social rule. Given these considerations, affective care moves from a prime source of the normativity of action, that it plays for non-human animals, to a mechanism of learning, refinement and disciplining that keeps humans in the constraints of socially shared practices. Further, note the strong normative ("what is right and what is not") as well as authoritarian language that Rietveld uses in the quote above. The architect is *disciplined* into practices that she *accepts as her preferences and sensitivities based on the examples given to her by experts*. As we will see later, this, if read charitably, amounts to a naïve Panglossian view of social norms. If read in the context of most people's social reality, it rather describes an authoritarian, if not totalitarian view of norms.

Despite these shortcomings, I think there is a lot to agree with Rietveld's work. In particular, the idea that affective care is responsible for non-deliberative rule-keeping judgments is a most welcome addition to the debate. And it also seems true that affective care is responsible for the adaption, refinement and disciplining of human action with regard to social practices. In the following, I show, first, that the normativity of everyday human actions derives primarily from affective care for oneself and others, and not from linguistically mediated social rules. Then I show, second, that care for oneself and others does not stand in the naïve, harmonious relationship to social rules that authors who follow EC-Wittgenstein seem to assume. Even though many social practices certainly contribute to what makes us who we are—independent of whether that is good or bad—many, if not most social rules might stand in an adverse relationship to what we want and care for; i.e. they force us to follow practices that might not be in alignment with our care for us and others. Accordingly, some of us constantly have to compromise or negotiate between the normativity that derives from our care for ourselves and others and the law-like rules of socially constructed practices.

3. Care for Oneself and Others versus Authoritarian Rule-Following

One basic idea, that certainly goes back to at least Heidegger (1927/2006), but also to other philosophical traditions that emphasize the importance of interest, affect and care, such as utilitarianism (Singer, 2009), is that affective care plays a constitutive role for the grounding and generation of normativity and phenomena related to normativity, such as goals and purposes. Ratcliffe (2002), referring to Heidegger, puts it like this: "Care is the condition for the possibility of apprehending the world as a significant whole, as an arena of possible projects, goals and purposes" (p. 289).

Similarly, Urban gives a succinct summary of the role of care, which he calls "concern", for enactivism, one particular sub-paradigm within embodied cognition that has been heavily influenced by work of phenomenologists:

> That which makes the world meaningful for a cognitive system is its concern governed by the norm of the system's own continued existence and flourishing. It means that sense-making establishes a non-neutral perspective on the world which comes with its own normativity. Certain interactions facilitate autonomy of the system, while others degrade it – the former are better, the latter are worse. (Urban, 2015, p. 122)

The conception of care that I use in this paper to account for the normativity of action draws heavily on Heidegger's (1927/2006) concept of "Sorge", the primary English translation of which is "care" (Dreyfus, 1991; Heidegger, 1927/1962). Heidegger's concept of care refers to a transcendental structure that itself comprises the transcendental structures understanding, affectivity, falling and discourse which Heidegger further grounds in the transcendental structure temporality (Heidegger, 1927/1962, p. 335). Taken together, these transcendental structures are the ontological conditions of the possibility of us being in our world: "Dasein's Being is care" (Heidegger, 1927/1962, p. 329).

Care accounts for action ontologically, because without care we cannot account for how the world presents itself as a place that invites actions, rather than a place of unintelligible substances or space-time points that have no significance for embodied creatures such as us (Dreyfus, 1991; Heidegger, 1927/1962; Jeuk, 2017a, 2019; Zahavi, 2009). And care accounts for action psychologically, because without caring, we would have no motivation to act in the first place (Heidegger, 1927/1962; Jeuk, 2019; Ratcliffe, 2002).

Obviously, an explanation, let alone a justification of this Heideggerian transcendental project is beyond the confines of this paper. Fortunately, it is also not necessary for my argument. I use in the following "care" in its everyday (*alltäglich*) sense—that sense from which Heidegger departs his analyses too. "Care", according to this everyday sense means as much as affectively caring for something. Since "care", in its ordinary language sense, contrary to its ontological sense, is not further analyzable, I explicate "care" in the following with the help of examples. Applying the method of cases, I develop examples of cases of representative human actions and account for the normativity of these actions either with care or with linguistically mediated social rule-following practices. This procedure shows that care accounts for the normativity of action more adequately than linguistically mediated social rule-following practices.

Before I commence with my analysis, I want to highlight one important point. Even though I stated above that I do not want to further engage with transcendental considerations and that I deem "care" not further analyzable in its everyday meaning, it is important to keep in mind that there is an affective and understanding-related component to care, as Heidegger (1927/1962) made clear: "Every understanding has its mood. Every state-of-mind is one in which one understands" (p. 385).[3]

In order to care for something, we have to understand what it is and why we care for it. Yet, the why of caring is certainly affective; caring is not a disinterested cognitive state. In that sense care has several connotations: affective ones, cognitive ones and ethical ones because usually caring involves, as we will see, caring for what seems right to us.

In that sense, care is the primary form of normativity for all animals in that they seek to act according to what is good for them and others that they care about if they can do the latter (Jeuk 2019). For instance, out of care for oneself, a bird looks for food, because it seeks to sustain itself. And I wake up in the morning and go to work as it is expected from me because, in the end, I care about getting paid and buying food for myself and my loved ones. Concretely, I do not wake up in the morning and go to work, do what is expected from me, because I uncritically follow rules like an automaton. I do so, because, if I am lucky enough, I care about my job. Or rather, like most humans that have to sell their labor (or even have to

3 Particularly the translation of "*Befindlichkeit*" as "state-of-mind" is unfortunate, because it conceals the affectivity involved in *Befindlichkeit* (Heidegger, 1927/2006, p. 335), but "mood" expresses the involved affectivity well and is an adequate translation of "*Stimmung*", which Heidegger uses in the original as an aspect of *Befindlichkeit* (Heidegger, 1927/2006, p. 335).

do slave labor), I do so because I care for things that can only be sustained in most societies if an employer or other market actor compensates me monetarily. Similarly, when I prepare a sandwich for myself, I might follow a social rule or rather a suggestion for a certain recipe. Yet, I only do so not because I am uncritically following a rule, but because I believe that following this recipe will allow me to make a sandwich that is to my liking—probably because I believe that the author of the recipe possesses a certain skill at cooking that is indicative of a cooking mastery that allows preparing dishes that are tastier than the meals that I could have prepared based on my own limited skill set. Yet, contrary to that Rietveld (2008b) claims: "Note that the expert's *adequate* response does not only decrease her dissatisfaction, but also changes something in the intersubjective world: *it corrects the object*" (p. 969, my italics).

How does this apply to the sandwich example? What is correct about a certain sandwich? If a sandwich is to my liking and an expert cook would alter the taste so that I do not like it anymore, in which way would she correct my sandwich? What Rietveld might have in mind here, following EC-Wittgenstein, might be this: my sandwich might not fall into any socially recognizable linguistic category, such as, for example, "BLT Sandwich". And the expert cook might "correct" my sandwich so that it does fall into a socially recognizable category. Yet, the question is why that should be important, as long as I do not specifically care for making a sandwich according to a social category. And even if I would care that my sandwich falls into a socially recognizable category according to a rule, it seems as if my care for this, as suggested above, derives from my care for something like taste and not for my care that my sandwich falls into a socially recognizable category. We certainly cannot claim that the act of making a sandwich that does not fall into a social category is not a normative action. As long as I care about the outcome of my action, the action is also normative; the sandwich is correct for me.

There are obviously many cases where the normativity of action partly depends on linguistic social rule-following; for instance, many actions that involve language are such cases. For example, if I go to a diner and order a Kale Sandwich and get a Reuben Sandwich instead, a social rule has been violated. Social rule violations such as that are perhaps the unique case of normativity that can be partly captured by an EC-Wittgensteinian account such as Rietveld's. Yet, importantly, social (linguistic) rule violation does not sufficiently, let alone foundationally account for the norm violation depicted above. The normativity of the involved action is compromised only if I care about the linguistic rule violation. Yet, for instance, I might actually like the outcome that results from the rule violation more than what would have resulted from proper linguistic rule-following. Or I might reject the Reuben Sandwich, not because of a social linguistic rule violation, but because I care for getting a Kale Sandwich because I care for things such as animal ethics or a particular taste. And the latter have nothing to do with social rule-following. Even though the waiter violated a social rule, the normative aspects of her action depend on my care for animal ethics and taste, not on the violation of a linguistic rule. *The linguistic rule merely helps to coordinate actions so that they are in accord with the agential norms for which we care—they do not constitute this normativity by themselves.* To further stress this point here, if I would live in a society that does not care about animals, would I then even act not normatively, if I reject the BLT sandwich because of animal ethical reasons, because the guiding social rule would be to consume animals. I think we have reached a good point to focus now on the ethically problematic aspects of the idea that social rule-following constitutes the normativity of action.

As the discussion of the sandwich example already indicates, social practices and rules often stand in antagonistic relationships to the normativity that derives from care for oneself and others. Yet, authors working in the EC-Wittgensteinian tradition assume a Panglossian world where learning a skill according to social norms contributes to the flourishing of oneself and others, and where the actions that are performed in accord with social norms are intrinsically

good; both ethically and epistemically.[4] Basically, a preestablished harmony between the things one cares for and social rules seems to exist according to their view. Recall Rietveld's (2008b) statement above: "Due to all this largely *unobtrusive* and *unnoticed disciplining* of the body the architect has learned to see *what is right and what is not. She develops preferences and sensitivities along the lines of the examples set by these experts*" (p. 989). I argue that this is the case for only very few activities and only very few people. For most people, it seems that one of the two following situations applies.

First, to speak with Marx and Engels (1845-1846/1958), either stand under the influence of false consciousness and follow social practices as if they were in accord with your own care; either out of a lack of critical understanding or out of emotional dissonance.

Second, constantly compromise in an inner affective struggle between the demands of an authoritarian, law-like world and your own normativity deriving from care for yourself and others.

In general, it seems that the EC-Wittgensteinian idea of normativity as harmonious social-rule-following derives from the lack of a proper phenomenology of everyday activities that is representative of the social, economic and ethical reality of most people. For most people actions are centered on things for which they care: food, shelter, dignity, appreciation, freedom, and pleasure in one's recreational time. And these things have to be negotiated, compromised and brought in compliance with the economic and social reality that they face. A reality where most of us must spend *an overwhelming part of our waking lives by selling our labor* for employers and their economic aims within a system that seems to care little about human flourishing and what we as individuals care for. That the everydayness of the overwhelming part of people is comprised by work (or rather labor) which happens under subpar social and economic standards is unfortunately even missing from Heidegger's work that often focuses on artifacts such as a singular, isolated episode of hammering a nail or romanticized and isolated instances of classic craftsmanship.

Now, Rietveld believes that the conceptual framework that he uses to describe the everyday actions of certain experts extends to other cases of everyday actions—as one should expect.

> For example, can we apply the conceptual framework of being moved to improve to the preparation of soup by a professional cook as well as by the person who is skillfully preparing dinner at home? To me it seems that all of the above suggests that we can, but it will still require some work to articulate the conditions under which we can do so. (Rietveld, 2008b, p. 996)

Yet, we directly see the problems with Rietveld's account, if we switch our focus to a "mundane" working life like that of a poor subway toilet cleaner. If we replace the prestigious, perhaps economically unconstrained architect with an underpaid toilet cleaner, it seems cynical to assume that she feels *"compelled", "disciplined",* or *"moved to improve"* to clean the restrooms of the subway station according to the social expectation what a properly clean toilet has to look like. Neither seems it appropriate to call her "*attuned to ways of acting",* i.e. cleaning a toilet, or *"mastering the craft"* of subway toilet cleaning—terms that Rietveld uses in the context of architectural actions (Rietveld, 2008b, p. 989).

Obviously, there is an expectation we share about how a clean toilet looks like. But we see in the toilet cleaner case what happens when we make a norm out of rules and expectations. The

4 I use at times "ethical" or "epistemic" interchangeably with "normative". I do this to highlight the particular aspect of a normative phenomenon in a context that might be either primarily ethical or primarily epistemic.

toilet cleaner is only a *good* toilet cleaner—and here we clearly see the full normative force of the term "good"—when she acts according to the expectation. But why should she, in the normative sense of care that we have for her and that she has for herself, act according to that expectation under the social, economic and socio-psychological conditions under which she most likely will have to work, i.e. terrible ones? Obviously, under none, if we are not economic paternalists.

And this shows us that there is a huge difference between acting according to an expectation based on a social rule and acting normatively. The prior expresses whether someone works according to a social rule, independent of whether this rule is evil, good, arbitrary or absurd, while the latter bestows an ethical status on someone's actions. And we should be very cautious to bestow this ethical status on people primarily based on their involvement in a network of social rules that are not of their own making—that have become their "form of life", but not based on their choice.

In Rietveld's defense, he claims that, "one of the important conditions is probably that the person cares enough about the consequences of his actions or the quality of his performance (in the case of experts such emotional engagement is typically high)", in order to apply his EC-Wittgensteinian conceptual framework (Rietveld, 2008b, p. 996). Yet, this claim is dubious, because why should a proper account of normative action be based on the motivation of the agent? A sufficient account of normative action should generalize to all kinds of actions. But even if Rietveld's framework would be applied only to cases in which high emotional engagement were present, the framework still entails unintuitive consequences. Take for instance the philosophical socialization of Descartes. He learned his "craft" from the scholastics but did not get attuned to how those experts in the field did philosophy. Did Descartes therefore act not-normatively, despite being highly emotionally engaged? Certainly not; rather, we might say, he was the one who acted normatively because his care for philosophy and truth made him break with the craft of the scholastics and their rules. How does this fit Rietveld's (2008b) following claim: "In the long run, *the community's established ways of acting* become ingrained and our architect will finally *display appropriate action instinctively*, in Wittgenstein's sense" (p. 989, italics mine). Obviously not at all.

To sum up, the normativity of action does often not derive from social rule-following. Rather to the contrary, there is a constant, often private inner struggle between social rule-following and what we normatively care for. To assume that the normativity of action derives from social rule-following, therefore, appears shockingly authoritarian at worst; playing in the hands of those who have economic, epistemic, social and political power, or hopelessly naïve at best, derived from the living world of worldly-detached philosophers. When some philosophers talk about the social dimension of the normativity of action, they apparently think about a casual game of chess or romanticize about a pre-industrial craftsman working in her cabin, but do not think about the complex and often brutal fabric of social, economic and political factors that make up the domain of sociality for most humans. Consider for instance the examples that Dreyfus (2002, 2007) regularly discusses when he analyzes skillful action. Most often he talks about professional chess players or other people involved in games and the arts. Or consider Montero (2013), who primarily discusses professional athletes and artistic dancers, whereas Rietveld often takes examples from non-ordinary, artistic architecture (Rietveld, 2008b; Rietveld and Brouwers, 2017). These authors focus on elite activities with a high potential for social distinction (Bourdieu, 1979/1984). And those cases that they discuss always seem to assume that the involved agent has an uncritical stance towards the rules and skills that she has to adapt and that these social rules are good in a normative sense.

The term "normative" originally referred in philosophy to phenomena that are ethically or epistemically desirable. That is, the term has been used in philosophy in stark contrast to

contingent rule-following that is potentially aethical and aepistemic. A conceptual distinction between "normative" and "rule-following" is desirable to clarify the difference between, for instance, ethical and aethical rule-following. Yet, unfortunately, "normative" has come to be applied to domains such as language use, logical correctness, skill at any activity, any standard of correctness and rule-following. Obviously, ordinary language allows to use normative concepts such as "good" or "bad", "right" or "wrong" with regard to these rule-following practices. Yet, if we do so in the context of philosophy without qualification and differentiation, we end up rendering simple rule-following practices with an ethical and epistemic significance that they do not possess. Rietveld, Kiverstein and other EC-Wittgensteinians blur the meaning of "normative" in this sense, in that they use "normative" with a double meaning that pertains to rule-following simpliciter, yet that also expresses that this rule-following is ethically or epistemically desirable.

But, rather than merely rule-following, people often are motivated to act normatively in the ethical and epistemic sense; they act according to what seems right to them in accordance with their care structure—not necessarily deliberatively, but tacitly. Or they at least often compromise between what seems right to them and what is demanded from them by social rule-following. And again, if we blur this distinction, as for instance Rietveld does, we receive a picture of humans as not only constantly following social rules, independent of whether they are good or bad for them or others, but also as finding them desirable on top of that. The latter might be unfortunately contingently true in many societies where people suffer from dissonance or false consciousness. Yet, philosophers must not tacitly incorporate things like dissonance or false consciousness into their *normative* accounts of action without the qualification that dissonance and false consciousness are undesirable epistemic and ethical fallacies that are contingent on a particular form of society. Therefore, it is at least important for philosophers who are concerned with providing ontological accounts of the normativity of action to not blur the distinction between normativity and simple, linguistically mediated social rule-following.

4. Conclusion

I have argued that, despite all its virtues, Rietveld's and Kiverstein's account of everyday human action locates the source of the normativity of action incorrectly. Instead of linguistically mediated social practices, care for oneself and others, that has an ethical component to it, should be considered as the source of the normativity of everyday human actions. Further, I have highlighted the Panglossian, authoritarian undertones of the social rule-following paradigm that is commonly used in embodied cognition. These authoritarian tendencies might emerge from a misguided focus on certain idealized and unrepresentative cases of everyday human actions. If we, however, switch the focus to representative everyday actions, we see that social rule-following is often constraining humans in unethical and unepistemic ways, that render the claim that the normativity of everyday actions should derive from social practices highly dubious.

Fortunately, it should be easy for proponents of embodied cognition to switch the focus of their research to care. Many of them consider themselves phenomenologists and there is plenty of phenomenological literature that shows the foundational role of care for action and normativity (Heidegger, 1927/2006; Jeuk, 2017a, 2019; Ratcliffe, 2002). Further, there is plenty of phenomenological as well as embodied cognition literature on sensorimotor systems and embodied mechanisms that allows for the explanation of the non-deliberative monitoring of skillful action against the backdrop of care-based normativity (Dreyfus, 2007; Freeman, 2000; Gallese and Lakoff, 2005; Heidegger, 1929/2010; Husserl, 1952, 1918–1926/1966; Jeuk, 2017a,b, 2019; Ratcliffe, 2015).

What will be more challenging for proponents of embodied cognition will be to develop

representative cases of everyday human actions. It was one of the main aims of embodied cognition to put the environment of agents in the focus of explanations of cognition and action. Yet, unfortunately, proponents of embodied cognition have focused on really narrow cases of animal-environment interactions, such as hammering a nail or using one's direct material environment to direct one's actions. Or they have focused on too general cases, such as language use simpliciter as that what is supposedly explaining the totality of human social interactions. The former case is way too isolated; the latter case overemphasizes the role of language and rules immensely. Rather, what is needed is an account of the human environment that comprises the social, cultural, ethical, political and economic forces that constantly have a direct or indirect background influence on human action. Differently put, proponents of embodied cognition and many phenomenologists too will have to leave the unrepresentative cases of action that function as the descriptive basis of their work behind and develop more accurate representative descriptions.
Only if such an account is in place, will we be able to receive an adequate account of the relationship between the normativity of action based on care for oneself and others and the set of social, cultural, ethical, political and economic institutions that force us to compromise our normative stance while acting in the world.

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PIETRO SALIS
Università di Cagliari
pietromsalis@gmail.com

IMPLICIT NORMS

abstract

Robert Brandom has developed an account of conceptual content as instituted by social practices. Such practices are understood as being implicitly normative. Brandom proposed the idea of implicit norms in order to meet some requirements imposed by Wittgenstein's remarks on rule-following: escaping the regress of rules on the one hand, and avoiding mere regular behavior on the other. Anandi Hattiangadi has criticized this account as failing to meet such requirements. In what follows, I try to show how the correct understanding of sanctions and the expressivist reading of the issue can meet these challenges.

keywords

Brandom, Heath, Hattiangadi, Dispositionalism, Expressivism, Implicit norms, Norms, Normativity

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1. Introduction: normativity and practice

Many philosophical accounts try to understand mind and language in terms of rule-governed practices.[1] It seems both intuitive and promising to think about intentional actions, and so also of linguistic moves, as something that can be done correctly or incorrectly.[2] According to this insight, understanding the meaning of a linguistic expression means knowing how to use it properly, and so distinguishing between correct and incorrect uses of it.

The norms that govern human behavior, thought, and language, however, present a number of relevant puzzles and challenges. In particular, a crucial problem seems to concern the way we should understand such rules. For example, it is a well-known problem that the very conception of such rules seems to resist the assimilation to usual accounts of norms. The paradigmatic idea of a norm, in fact, is that of an instruction having explicit propositional form, like prohibitions, permissions, and prescriptions. A general example could be a prescription expressed by an explicit (i.e. propositionally contentful) rule EPR: *to do X properly, in the context C, apply Y*.[3] What's wrong with EPR?

Such a conception of a rule seems to be problematic when applied to actions and linguistic utterances. EPR (Brandom calls it regulism), in fact, seems to be in trouble with a particular regress: how does one know that *Y is applied* correctly? It seems that we need another rule for the correct application of Y. Wittgenstein, for example, used to talk about the possibility to *interpret* the rule as being correctly applied or not.[4] EPR seems to be bound to explain the application of Y *via* the application of a rule Z, and the application of Z *via* the application of another rule V, and so on ad infinitum. As many authors have convincingly argued in different

1 Kant is the primary source for this insight. The main idea is that the intentionality of judgment and action requires using concepts, and that "conceptually structured activity is distinguished by its *normative* character" (Brandom, 1994, p. 8). Concepts provide the contents of judgments and intentions for action, and can be applied correctly or incorrectly. According to Brandom, Kant characterized conceptual activity as bearing a kind of responsibility: we are responsible for our judgments and actions. Kant is also the first to think about concepts as *rules*, specifying how something *ought* to be done (Brandom, 1994, p. 8). For Brandom, Kant thought that "conceptually articulated acts are liable to assessments of correctness" (Brandom, 1994, p. 9).

2 However, this is a debated issue. For example, a number of philosophers deny this intuition about the normativity of meaning and content. See for example, Glüer & Wikforss (2009), Hattiangadi (2007), Wikforss (2001). For an overview, see Glüer & Wikforss (2018).

3 For a discussion of the problems connected with the attempts at propositional construal of such norms, especially in the context of epistemic rules, see Boghossian (2008).

4 Wittgenstein (1953, §201).

contexts,[5] this unpleasant consequence suggests that EPR cannot be the right conception of rules that we need in order to understand the normativity of mind and language.
We need a different conception, one that needs not the application, each time, of another rule. Wittgenstein has been the pioneer of this line of thought, when he said that rules are something that we follow *blindly* and without having an explicit formulation in mind.[6] Robert Brandom urges a pragmatist route to avoid the regress. Regulism, which is both explicit and propositional, does not work in understanding how we follow the rules in our practices, because it cannot escape the regress. Rules that can be followed blindly seem to be more promising, as these permit us to bypass such a regress: these need not the application of further rules.[7] To say that certain rules are followed blindly means that rule-following depends on certain practical abilities. As such, these rules appear to be tacit and irreflexive, but, more importantly, they show another crucial feature.

2. Rules implicit in a practice and the threat of regularism

The answer to these difficulties is a different conception of a rule: a rule implicit in a practice (IPR). This means that we treat our moves as implicitly right or wrong. Furthermore, we do so in what we do before doing it in what we say, and so IPR challenges the idea that norms are as such linguistic and propositional. In this sense, implicit norms are both nonlinguistic and pre-linguistic. According to Brandom (1994, p. 21), for example, IPR is "a notion of primitive correctnesses of performance *implicit* in *practice* that precede and are presupposed by their *explicit* formulation in *rules* and *principles*". IPR entails that the lower layer of rule-following means participating in a social practice, and that it is a kind of irreflexive *know-how*, as opposed to a reflexive and propositionally explicit *know-that*.[8] Therefore, according to this idea, rule-following is cashed out in terms of performances and social practice. Brandom (1994, p. 23) is particularly clear on this: "Thus one knows how to ride a bicycle, apply a concept, draw an inference, [...] just in case one can discriminate *in one's practice*, in the performances one produces and assesses, between *correct and incorrect ways of doing* these things" (emphasis added).
However, this idea faces an immediate obstacle. If we understand such rules as determined just by our behavior, we fall into "regularism".[9] As many have argued, if we conceive norms as merely determined by behavioral regularities, we lose the distinction between what we do and what we *ought* to do. While facts regarding the ways we act can help determine behavioral regularities, these are insufficient for a tenable account of correctness. Wittgenstein observed that any behavior sequence is open to an infinite number of possible continuations; therefore, any behavior sequence can be read as conforming to a potentially infinite number of norms. This means behavioral regularities are insufficient to identify the normative pattern that they exhibit.[10] Thus, the norms governing our practices cannot be simply determined by behavioral

5 See for example Boghossian (1989; 2008), Brandom (1994: chap. 1), Wittgenstein (1953). Boghossian claims that, to avoid the regress, at least some rule-following must be blind (2008).
6 Wittgenstein (1953, §219).
7 "If such regularities of performance can be treated as practices governed by implicit norms, then there will be no regress or circularity in appealing to them as part of an account of knowing-that, of expressing norms explicitly in rules and principles. For the only one who needs to understand how to apply correctly the rule conforming to which makes performances count as regular is the theorist who describes the regularity in terms of that rule" Brandom (1994, pp. 26-27).
8 See also MacBeth (2017, p. 8). Following explicit rules is a kind of rule-following that is not assimilable to a mere know-how. Many thanks to an anonymous reviewer for pointing this out.
9 Brandom (1994, p. 26).
10 Brandom calls this difficulty the "gerrymandering objection": "There is simply no such thing as *the* pattern or regularity exhibited by a stretch of past behaviour, which can be appealed to in judging some candidate bit of future behavior as regular or irregular, and hence, on this line, as correct or incorrect" Brandom (1994, p. 28).

regularities. A possible solution would be understanding the behavior regularities in terms of the practitioners' *dispositions:* however, this view also fails to accommodate for error. If rule-following depends merely on dispositions, the distinction between correct and incorrect is lost – one acts according to what she is *disposed to do* and not according to what she *ought to do*. Brandom endorses another view that depends on the *social* understanding of these norms, a view in which rule-following is entirely understood in terms of performance proprieties, and discriminating what is correct or incorrect is something that is implicit in our doings as performance *producers* and *assessors*.[11] Such doings can be characterized as practical attitudes. The rule-governed activities need *two* main contexts that highlight the social nature of these rules: using a terminology borrowed from Brandom, we should distinguish a context of *deliberation*, where one chooses the move to be made, and the context of *assessment*, where a move is assessed by another practitioner – and assessment is something that can be done correctly or incorrectly. Furthermore, the acknowledgment of these perspectives implicitly encourages a form of constitutive externalism regarding rule-following by making the performance assessor's perspective as fundamental as that of the performance producer's.[12] Thus, when it comes to normative accounts of mind and language, we meet a conception of normativity that hardly resembles the stereotypical idea of a rule. We need something that is: 1) practical (rather than theoretical as a principle); 2) implicit in what we do (rather than having an explicit propositional form); 3) and social (because rule-following necessarily requires the possibility of assessment by one's peers).

3. Phenomenalism about norms

These ideas introduce the wider philosophical challenge that Brandom wants to meet. His main strategy is what he calls the *phenomenalist* understanding of norms, and it is a view that confers significant importance to the perspectives of those who produce performances (in a context of deliberation) and of those who assess them (in a context of assessment). According to phenomenalism, in fact, "norms are in an important sense in the eye of the beholder, so that one cannot address the question of what implicit norms are, independently of the question of what it is to acknowledge them in practice" (Brandom, 1994, p. 25). This phenomenalist perspective acknowledges the need to participate in a practice to understand its rules, while the alternative is understanding rules from scratch or from outside the practice. Only participants in the practice (P) are entitled to a *genuine* understanding of the rules (R) that are in force in P.[13] Thus, the implicit rules cannot be determined without adopting, or at least acknowledging, the participants' perspective. Phenomenalism, the view that considers such perspectives as constitutive of rule-governed activities, becomes a fundamental interplay of the *attitudes* and *statuses* that the participants can undertake and attribute within the practice.[14] These normative statuses and attitudes are strictly connected with the two main dimensions concerning what we do and how we assess what the other participants do:

> The direction of explanation to be pursued here first offers an account of the practical attitude of *taking* something to be correct according-to-a-practice, and then explains the status of *being* correct-according-to-a-practice by appeal to those attitudes. Filling

11 Wittgenstein implicitly meant that rule-following involves some kind of social externalism: rule-following is not anything that can be performed *privately*, since this would amount to the collapse of the distinction between following a rule and the belief of following it. See Wittgenstein (1953, §202).
12 See Heath (2001).
13 Nonparticipants could be described like those individuals presented by Quine as a radical translator and by Davidson as a radical interpreter. See Quine (1960) and Davidson (1984).
14 Matthias Kiesselbach defines this interplay as "converging feedback loops". See Kiesselbach (2012, p. 109).

> in a story about normative attitudes as assessments of normative status, and explaining how such attitudes are related both to those statuses and to what is actually done, will count as specifying a sense of "norms implicit in practice" just insofar as the result satisfies the criteria of adequacy imposed on the notion of practice by the regress-of-rules argument (Brandom, 1994, p. 25).

Therefore, according to this perspective, normative attitudes – those undertaken within a practice – are the actual regress stopper and the ultimate ground of normativity. Normative statuses, according to this phenomenalist view of norms, depend on practical normative attitudes: the participants' performances and assessments establish, in their interplay of moves and mutual expectations, what is correct *according to a practice*. The interplay of the participants' practical attitudes within the practice socially institutes the normative statuses, like the correctness of a performance.
Brandom believes that in our discursive doings, particularly the acts of asserting and inferring, we apply implicit norms in this way. This does not mean, however, that we cannot have explicit rules/principles in our practices. With the proper additional expressive resources – i.e., normative vocabulary – norms and rules can go to the higher level and become propositionally explicit. Hence, implicit norms are the basic layer[15] of normativity but do not exhaust the types of norms that we obey, violate, and acknowledge. Once the practice is up and running, everything we say and do can be improved and better specified thanks to additional expressive resources – not only normative vocabulary but also modal vocabulary, logical vocabulary, and so forth.[16] These resources permit the shift from a non-propositional and implicit know-how to an explicit and propositional know-that.[17] Thus, according to this picture, discursive practice is a social normative system that is liable to improve itself by means of expressive enrichment. The addition of further expressive resources can: 1) boost the quantity and quality of things that we can say and do, 2) improve and develop the norms that we use and follow, and 3) multiply and differentiate the conceptions of norms that we entertain and understand. The main resource is the normative vocabulary.

4. Normative vocabulary and the refusal of reductionism

With the failure of regularism and of dispositionalism, Brandom counters any reductionist attempt to explain norms. As he states, reductionism either fails because it cannot accommodate error, or it fails by making use of "some already normative raw materials" (Brandom, 1994, p. 41). Thus, norms cannot be explained in naturalistic reductive terms. This does not mean endorsing a non-natural realism about norms, as norms are, in some sense, "creatures of ours" (Brandom, 1994, p. 626). Instead, it means that social practices are *norms all the way down* (see below).[18] As Ronald Loeffler (2017, chap. 1) put it, "[t]he correct account of the origin of discursive norms in particular, according to Brandom, already employs normative vocabulary".
Therefore, norms are explained by specifying what we do in normative terms.
Thus, another question becomes particularly pressing: how can a norm genuinely emerge from a social practice when individual attitudes may differ both in assessment and in deliberation?

15 How basic? This is a challenging question for Brandom's account. Wolfgang Detel, with his own account of basic social norms, attempted to pressure Brandom's stance about implicit norms by questioning his explanatory raw materials. He claims Brandom needs an account of basic social norms to ground his own view. See Detel (2008).
16 See Brandom (2008) for a systematic account of how such vocabularies can help specify what we do with our moves, both linguistic and nonlinguistic. This is the main account of Brandom's expressivism.
17 Brandom (1994, pp. 25-26).
18 Brandom (1994, p. 44).

Brandom's account, even though devoted to avoiding and criticizing dispositionalism, concerns certain dispositions. According to this approach, two fundamental layers of dispositions characterize rule-followers. However, practitioners are disposed to respond reliably to differential stimuli, and this means that practical attitudes can be understood in terms of such reliable dispositions. This implies the endorsement of a kind of reliabilism, which is, however, restricted to a particular reference class – hence, such responses are not reliable per se.[19] Among these responsive dispositions, practitioners are disposed to *sanction* the moves of other practitioners as good or bad.[20] Such dispositions to sanction are deemed to explain how performance assessments work – positive sanctions work as reinforcing certain bits of behavior, while negative sanctions punish blameful bits. Sanctions are also special because they play a normative function without presupposing further normative resources;[21] in *this* context, sanctions play a normative function and depend on a layer of responsive dispositions.[22]

Thus, according to Brandom's account, status attributions are explained in terms of practical attitudes, i.e., the actual ways we assess moves in our practice, where the perspectives of the producer and of the assessor of a particular performance are both in play in a loop of reciprocity – as one acts by implicitly acknowledging the expectations of the assessor, and vice versa. Therefore, the sanctioning activity involves a kind of reciprocity, depending on the expectations that are met or violated. Thus, normative status is *socially instituted* through the social practice of treating certain moves as appropriate or inappropriate.

5. Implicit norms and the social institution of content

This account of implicit norms provides a general grasp of the way we treat linguistic moves as correct or incorrect. However, Brandom's idea digs deeper and purports to be an account of the resources needed to explain conceptual content. Developing a thought experiment invented by John Haugeland,[23] he imagines a pre-conceptual community where there are no meanings, contents, or propositional attitudes but where members' behavior is nonetheless norm-governed. Therefore, the abilities involved in the institution of norms do not presuppose conceptual resources. According to Brandom, the resources at the disposal of these proto-hominids are physical and behavioral abilities. These abilities can be mostly explained in terms of reliable dispositions to differentially respond to stimuli. Furthermore, these dispositions ground the ability to sanction certain moves as appropriate or inappropriate. Here, Brandom offers the example of a proto-hominid who beats his fellow with sticks to sanction an incorrect move.[24] These sanctions, although depending on dispositions, can be specified in normative/deontic terms. We can specify the moves made by the hominids as undertaking certain commitments and their sanctioning activity as distinguishing implicitly between commitments that deserve an entitlement and those that do not: the social practice constitutes the background of attitudes *where these bits of behavior count as sanctioning* certain moves as correct or not. The moves made by proto-hominids are treated as practical attitudes,

19 See Brandom (2000, chap. 3) for a criticism of unrestricted reliabilism.
20 This is a tricky passage. For example, Hattiangadi (2003) sees this reliance on sanctions as a failure of Brandom's attempted escape from dispositionalism. See below.
21 See Heath (2001, p. 31).
22 This point requires attention: the importance of dispositions for Brandom lies in the idea that they are a necessary requirement for the practice and not in the idea of explaining normative practice in dispositionalist terms. See Brandom (1994, p. 46).
23 Haugeland (1982).
24 This is a controversial example that Brandom uses mostly to disqualify the idea that sanctions work entirely as physical punishment or reinforcement (against Haugeland). See Brandom (1994, p. 36). He also uses this to introduce sanctions, as the "simplest example" (Brandom, 1994, p. 34).

and such attitudes are the ultimate source of normative status and, hence, conceptual content. The imposition of a sanction, however, because of the background of attitudes, is *not* to be found just in the physical punishing behavior, e.g. in the use of the sticks: it rather lies in the *alteration* of normative statuses and attitudes. This alteration, as already stated, depends on the interplay of the performance producers' and assessors' moves and expectations, together with the possibility to improve the practice with further expressive normative resources. In fact, as Brandom clarifies, identifying the physical punishing behavior with the imposition of a normative status would be a downfall in the gerrymandering problem: the behavior would be underdetermined, facing a wide multitude of arbitrary norms.[25] It is the interplay of the agents' and assessors' mutual practical attitudes that makes physical punishment *work as* a normative function, as an imposition of normative status. Once normative status is acknowledged in the practice and conceptual content is a resource at the participants' disposal, new expressive resources help the participants specify what they do in explicit normative terms. Thus, the idea relies on the use of normative/deontic vocabulary to specify the moves and the attitudes constitutive of the practice. Specifying the interplay between certain moves with the help of normative vocabulary equals identifying a behavior pattern as conforming to a certain norm. This also means that normative vocabulary is the best expressive resource to specify a practice having this structure.

6. The threat of dispositionalism. Hattiangadi's criticism

Anandi Hattiangadi reads Brandom's conception of implicit norms as ultimately succumbing, in order to escape the regulist regress, to a version of dispositionalism (i.e., it cannot escape regularism). Hattiangadi (2003, p. 423) correctly emphasizes how Brandom's idea depends on the understanding of normative vocabulary as irreducible and highlights that this does not entail a non-naturalist realism on norms, as these must be understood as *creatures of ours*. Then, she summarizes the three layers of Brandom's account of implicit norms:

> First, Brandom claims that normative status is a function of attributions of that status; that taking some act to be correct or incorrect is prior to its being correct or incorrect. These attributions are, in turn, explained by our practical attitudes: "the normative significances we take [things] to have, are products of our practical normative attitudes, as expressed in our activity of imposing those significances and acknowledging them in assessment". Finally, our practical attitudes are explained in terms of sanction – the activity of imposing attributions of status (Hattiangadi, 2003, p. 423).

At this point, she goes straight to her diagnosis: an account based *on sanctions* hardly avoids falling into dispositionalism. She starts with a reconstruction of Brandom's thought experiment on the pre-conceptual community. According to her, it is unclear how Brandom's view may differ from a naturalistic one (Hattiangadi, 2003, p. 424). It is true that the explanatory role is played by the idea of assessment of propriety for the moves that are made by proto-humans. But she sees this as controversial: although Brandom "uses normative vocabulary to say that the proto-hominids treat each other's performances as 'correct' or 'incorrect', he suggests that they do so by way of their purely physical behaviour and abilities" (Hattiangadi, 2003, p. 424). As she recognizes, however, these abilities are just "the reliable disposition to respond in different ways to different stimuli" (Hattiangadi, 2003, p. 425). But this, she argues, amounts ultimately to a dispositionalist view. In fact, even if Brandom uses

25 Brandom (1994, p. 36).

deontic normative vocabulary to specify basic practices, these presuppose only dispositions to sanction.[26]

Then, she asks: "[h]ow could Brandom's proposal possibly avoid the gerrymandering objection?" (Hattiangadi, 2003, p. 426). She argues that Brandom cannot avoid it because even though he describes such practices by using normative vocabulary, such vocabulary does not play the explanatory role that a solution to the problem *should* play: "the normative vocabulary affords no purchase on the problem" (Hattiangadi, 2003, p. 426). Why? She claims that Brandom cannot assume that the abilities of pre-conceptual creatures include the ability to think and entertain concepts. In fact, without the ability to think, the gerrymandering problem is not solved: "[t]he account of how a practice must be in order for it to institute conceptual content cannot presuppose that the participants of the practice can have explicit, contentful thoughts" (Hattiangadi, 2003, p. 426). Thus, according to this reconstruction, Brandom fails in his explanation of implicit norms and falls back into a sanction-based dispositionalism. Then, Hattiangadi (2003) uses an example to clarify what she meant with her criticism:

> Consider a face-to-face interaction between two members of the [...] community described by Brandom (call them John and Emma). John says to Emma, pointing, 'that's red'. We are supposed to imagine that John makes these sounds and gestures, and Emma, taking all of this in, attributes certain commitments and entitlements to John. This just means that Emma becomes disposed to sanction John – disposed, that is, to punish John under some circumstances [...]. Imagine, further, that at some later time poor John is punished. The question is what has John been punished for? Has Emma attributed the commitment to say 'that's not blue', or [...] to say 'that's not grue'? Which of these commitments has John violated? (Hattiangadi, 2003, p. 427).

Therefore, an account based on dispositions to sanction is insufficient to explain normative statuses. Furthermore, mere sanctioning seems inadequate to identify the norm that is violated, once again creating the gerrymandering problem. To the contrary, if we consider the inclusion of normative vocabulary at the level of normative status attribution, then we endorse a kind of "robust realism" about norms and normative statuses.[27] As she says "if preconceptual creatures discern normative statuses, then the statuses themselves must be there to be discerned. But this is not an assumption Brandom is likely to embrace" (Hattiangadi, 2003, pp. 427-428) as for Brandom norms are "creatures of ours". Thus, it appears that the inclusion of normative vocabulary at the normative status attribution level does not help.

A possible way out depends on pushing the claim that it is norms *all the way down* and on understanding normative status attributions as constitutive of normative status.[28] Hence, there is the perspective of interpreters in play as they interpret the moves of someone as bound to certain norms: "the normative status of the actions of the protohominids is a function of our attribution of that status", "[...] *we*, [...], make it possible for them to institute their norms by attributing to them the ability to attribute correctly or incorrectly" (Hattiangadi, 2003, p. 428).

Thus, the perspectives of the proto-hominids making their moves are to be complemented with the perspectives of the *interpreters* reading such moves by means of normative vocabulary. However, the upshot is disappointing:

26 Hattiangadi (2003, p. 425).
27 Hattiangadi (2003, p. 427).
28 This is actually Brandom's view.

> If our attribution of status is necessary to discriminate which commitments and entitlements are being undertaken or attributed by the fictional proto-hominids, then it will turn out that explicit attribution of normative status (by us) is necessary for the implicit practice to be one capable of mere normative sanction (Hattiangadi, 2003, p. 429).

This possibility is problematic for Brandom's perspective, as attributing explicit norms as a necessary condition for having implicit ones would count as viciously circular.[29] So, according to her example, and on the basis of the failure of alternative routes, Brandom's account is doomed to fall back into a dispositionalism unacceptable for him: "[...] there is no sense to be made of the idea that a) the proto-hominids are pre-linguistic and pre-conceptual and that b) they can attribute deontic status [...] merely by sanctioning" (Hattiangadi, 2003, p. 429).[30] Hattiangadi concludes as follows: Brandom's account depends substantially on dispositions, and the use of normative vocabulary adds nothing that can avoid the gerrymandering objection. She also adds that if we adopt further resources permitting the attributions of status to determine certain normative statuses, then we fall back into the regulist regress: "[t]hough [...] [Brandom] purports to avoid both gerrymandering and infinite regress, it turns out that he cannot" (Hattiangadi, 2003, p. 431).

7. Understanding sanctions

Such an account presupposes some controversial assumptions, the most important of which concerns how to understand sanctions, as it is one of the thorny issues connected with this account of implicit norms. As the issues raised by Hattiangadi indicate, Brandomian text can be difficult to read, and many readers find the chapter, or some point, a bit elusive.[31] Let us try to explore the controversial assumptions by means of one of these readings.[32]

One main problem concerning sanctions in Brandom's framework depends on a *naturalistic* misunderstanding. Thinking about sanctions as reinforcements/punishments does not commit to thinking they can explain normative assessment in terms of some behavior that can be understood in non-normative – hence, naturalistic – terms.[33] This reductive attitude is not mandatory. To the contrary, we can understand sanctions as *changes* in the normative statuses of the persons who are sanctioned. This means that sanctions can be, in principle, entirely *internal* to a normative system. This point depends on a distinction Brandom makes, well emphasized by Joseph Heath's discussion, between *external* and *internal* sanctions: external sanctions are merely instrumental behavior-conditioning acts, like beating one with sticks – of course, to think about sanctions this way can invite naturalistic/dispositionalist readings (as Hattiangadi seems to do); internal sanctions, however, do not entirely depend on mere dispositions to sanction, at least if they need a network of moves and evaluations of moves where the interplay of the producers' and assessors' perspectives of performances builds a loop of mutual expectations and responses to those expectations. Internal sanctions can count as affecting normative statuses within this interplay of moves, expectations, and perspectives: this interplay counts as a social context where the sanctioning behavior is bound

29 Hattiangadi (2003, p. 429). Heath (2001) and Kiesselbach (2012) argue that such circularity is not vicious.
30 She explores also a possible *quietist* reading of Brandom's account, according to which norms are in the bedrock and need not to be explained. She rightly explains that this route is incompatible with the explicit constraints that Brandom affirms he wants to meet.
31 See, for example, Rosen (1997), Heath (2001), Gibbard (2010), and Kiesselbach (2012).
32 In this attempt, I generally rely on Heath (2001), as it is, in my opinion, the most complete and better account of chapter 1 of *Making It Explicit* in the literature. Kiesselbach (2012) makes similar points; however, it is a little less focused on the expressivist reading.
33 See Heath (2001, p. 33). See also Brandom (1994, p. 36).

to a number of expectations, and even a merely physical behavior like beating one with sticks is no longer just physical behavior (it is rather a move *in* a game).[34] Furthermore, the very idea of sanctions that are merely internal (and need not the presence of a physical behavior) indicates normative functions heavily depend on the interplay of attitudes and perspectives. This is a context where physical behavior also *counts as* playing a normative function.[35] To see this, we can look at the opposite case: explicit examples of sanctions that play such a normative function even without physical punishment. Brandom's example is forbidding someone to attend a weekly festival,[36] and this sanction is *already* characterized in normative terms: this sanction specifies what a transgressor is implicitly *not entitled to do* because of his transgression. More importantly, relying on sanctions that depend on a system of normative attitudes means that such internal sanctions are not ultimately anchored on external ones.[37] This means that the very idea of a normative system characterized *only* by internal sanctions is not at all incoherent, and this is the ultimate meaning of the idea that it is *norms all the way down*. Moves and expectations that are internal to a social system, by means of the very structure of reciprocity that binds together the participants – as agents and assessors – determine the imposition of normative status by means of assessment via internal sanctions. A mutual ascription of attitudes is essential in these interactions, and sanctions play a role that is internal to this game. Moves that meet the assessor's expectations could count implicitly as the agent's entitled commitments.[38]

Furthermore, this is also the idea behind Brandom's resistance to reductive explanations of normativity: while naturalistic explanations – based on non-normative facts or properties – fail to maintain the distinction between what is done and what ought to be done, normative vocabulary is helpful because it is the only resource that is expressively adequate and, hence, successful in specifying our doings according to some kind of correctness. Considering normative primitives as inadequate just reflects a gratuitous reductionist bias: the idea that explanations, *qua explanations*, must be reductive. The following are important points concerning naturalistic explanations: 1) reductive accounts are based on causal explanations, and according to Brandom, the use of causal vocabulary presupposes some implicit grasp of modal notions – particularly *alethic* modalities like "necessity," "possibility," "dispositions," etc.; 2) since modalities are a big open problem for naturalistic attempts (i.e., we lack noncontroversial naturalistic accounts of modalities), the fact that causal accounts are supposed to make use of modalities is an issue for these naturalistic attempts; 3) like reductive accounts, nonreductive accounts as normativism also presuppose an implicit grasp of modal notions – particularly *deontic* modalities like "forbidden," "permitted," "entitled," etc.; 4) since normativism does not want to naturalize modalities (it does not need a reduction of

34 Brandom explicitly affirms that "it is one thing to understand practical assessment as sanctioning, and quite another to understand sanctioning in nonnormative terms such as reinforcement" (1994, p. 42).

35 According to Brandom, the use and mastery of functionalist vocabulary presupposes the use and mastery of normative vocabulary. This also means that causal functionalist accounts presuppose the implicit grasp of normative notions. See Brandom (1994, p. 16; 2008, chap. 4). This point is also connected with the fact that reductionism presupposes resources that are hardly reducible. See below.

36 Brandom (1994, p. 43).

37 Heath (2001, p. 33). This is a point that can be used to pressure the very idea of sanctions as internal to the system. Heath makes the example of parents using sanctions to educate children, and he argues that common examples appear to be clearly external: "no, I won't pass it to you until you ask nicely for it" (2001, pp. 34-35).

38 Heath offers a detailed reconstruction of the formal structure of an interplay of moves and assessments between two agents. He also shows that this interplay is game-theoretic and, therefore, purported to reach a number of possible equilibria between participants. See Heath (2001, p. 42). The difficulty that Brandom faces in characterizing this interplay partly explains his interest in the Hegelian notion of "recognition", comprising also a historical dimension of normative practices.

modal talk), it is particularly willing to make substantive use of deontic notions; 5) while the use of modalities can represent a general problem for reductionism and naturalism, it is perfectly fine for normativism.[39] Since the reduction fails anyway, the resources that are *expressively more adequate* for the task should be used. Normative deontic vocabulary is particularly useful in specifying what we do in terms of correctness, while naturalistic causal vocabularies are expressively less powerful for *this* specific task. Thus, antireductionism is an option whose relevance is dictated *also* by a general need for a minimum level of expressive adequacy. Therefore, after the acknowledgment of the issues surrounding such reductionist presuppositions, normative primitives like internal sanctions are no longer inadequate. Furthermore, Heath also highlights how normativity is not entirely to be found in this strategic use of normative vocabulary, stating there is a "background commitment" in Brandom's account, according to which practitioners have an implicit grasp of what it is to obey a rule, particularly when it comes to making social moves like assertions.[40] Rule-following is part and parcel with making certain moves in the social space: these moves involve certain primitive (unexplained but constitutive) forms of (practical) adequacy. The interplay between the practitioners' moves, expectations, and perspectives gives rise to mutual attributions of normative attitudes and statuses, just like intentional systems attribute with each other's intentional states.[41] This "bedrock primitivism" about implicit norms is the basis of a fully *expressivist* reading of chapter 1 of *Making It Explicit*: the point is to boost the understanding of the discursive practice structure from within by adding more and more expressive resources. Normative vocabulary is the key feature of this expressivist reading, as it is what permits us to state explicitly, in propositional terms, what we do implicitly in the practice; thus, the theorist/interpreter (using such an expressive vocabulary) belongs to the very practice being interpreted.[42] Normative vocabulary permits a specification, in normative terms, of a practice that is in a sense already normative at its bedrock.[43] Therefore, the idea is that not only are practices implicitly normative but that we can, with the help of expressively adequate resources, specify propositionally what we do in the practice, thus making it explicit.[44]
The final step to make the account complete concerns how we should understand the active role of what we called the interplay of the practitioners' perspectives, distinguished by means of the roles they play as agents (performance producers) or assessors. Again, Heath's reconstruction is useful in clarifying certain details. In particular, other than talking about normative attitudes and statuses, Heath tries to use the very notion of sanctions in specifying such an interplay. First, we can imagine two agents making moves, raising certain expectations by means of these moves, and assessing the interlocutor's responsive moves on the basis of such expectations. Moves are mutually sanctioned, positively or negatively,

39 As Heath states, the commitments implicit in naturalistic reductions are just as mysterious as those involved in normativist accounts. See Heath (2001, pp. 35-36).
40 Heath (2001, p. 36).
41 "Intentionally interpreting, adopting an intentional interpretive stance, is a practical attitude, and proprieties governing that practical attitude institute intentional states and hence normative statuses" Brandom (1994, p. 57). See also Brandom (1994, pp. 15, 55-62). Brandom, by the way, also defends the view that original intentionality depends on normative practice. See also Heath (2001, pp. 37-39).
42 Brandom (1994, p. 637).
43 Obviously, this conception may sound a bit frustrating to those who want an explanation at all costs of what such implicit norms are. See, for example, Detel (2008). However, we should remember that Brandom sees such explanatory urgency as ultimately flawed and not at all necessary. Resisting the compulsion of providing a reductive explanation does not mean to say that norms are supernatural: they come first with the moves of complex social organisms like us, and then in the normative specifications that we can achieve by going up the expressive ladder.
44 "[T]o illuminate the structure of language from within" (Heath, 2001, p. 36).

depending on the fact they meet each other's expectations. Thus, the response loop is bound to a kind of reciprocity. This is why we cannot ask, from outside the practice, whether agent *A* has been punished for being committed to *X* or to *Y*: if I belong to the practice, I already know; if I do not belong to the practice, then I am in the position of the *alien* interpreter[45] and am explicitly surrendering the constraints posed by phenomenalism (i.e., I am trying to understand a behavior pattern without acknowledging the participants' perspectives – as only participation grants access to these perspectives).
Heath discusses the "expectations" raised and fulfilled; however, this can be easily translated into the usual Brandomian talk of commitments and entitlements by understanding basic moves as inferentially articulated commitments. These expectations, ultimately, as Heath underlines, are constitutive of the pattern that the interaction exhibits; thus, a norm is at stake in every assessment of commitments undertaken by means of assertions.

8. Conclusion. An expressivist alternative to reductionism

From this discussion, Hattiangadi's criticism about Brandom's account seems to depend on a reductionist understanding of sanctions. This understanding considers sanctioning in dispositionalist terms, falling back into the gerrymandering problem. If we clarify that such reductionism is optional and distinguish between internal and external sanctions, as Heath does, we can understand sanctions in normative functionalist terms as altering the normative status of practitioners. Furthermore, these sanctions must be understood in a context of reciprocity between practitioners, i.e., these sanctions belong to a social context: the agents' and assessors' perspectives are both constitutive of the normative role played by sanctions as an encounter of mutual expectations raised by a game of moves and assessments of moves (physical behavior *alone* never determines the normative assessing function). Finally, interpreters attributing normative statuses are also practitioners, as the expressivist reading sees the adoption of normative vocabulary as an enrichment of the very practice.

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45 I distinguish between interpreters and alien interpreters because the former, according to Brandom, are internal to discursive practice (thus, default interpretation is never alien or radical).

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R.T. ALLEN
Independent Researcher
rt.allen@ntlworld.com

THE TACIT DIMENSIONS OF NORMATIVE RULES

abstract

All rules are normative. Using Polanyi's tacit integration, this article shows that all rules have tacit dimensions in their creation by recognition of regularities, application and modification, all of which cannot be made wholly explicit. J. Searle holds that some regular actions are not the following of unconscious rules, but ignores the fact that they have been tacitly formed by recognising of regularities. Tacitly known and practised rules are transmitted by apprentices observing the actions and judgements of masters, and then across generations by tradition. Thus knowledge and belief cannot be neither clearly distinguished nor separated. Justificatory, critical and foundational philosophies are to be replaced by a fiduciary and fallible one.

keywords

Michael Polanyi, tacit rules, skills

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1. The Necessity of Regularities and Rules in All Awareness

All our cognition depends upon making sense of our perceptions, and that depends upon developing the ability to recognise what we now perceive as the *same sort* of object as previously perceived, and then, especially with regard to faces and voices, as the *same one.* That is, to recognise regularities. A specific regularity is especially important: that of sequences, that *B* will follow *A.* All intelligent life requires such regularities upon which it can rely in order to act intelligently and not at random. Such regularities therefore provide rules for action. All this in animals and human infants is performed tacitly, and the tacit following of rules continues throughout our adult life, as we shall see from Michael Polanyi's account of tacit knowledge.[1] But before that it is more convenient to consider three other items: the normative character of all rules, the distinction between mere habits and the tacit following of rules, and John Searle's objection to all unreflective and repeated actions as the tacit following of rules.

2. Rules and Normativity

All rules are normative and give us guidance in one way or another in the activities and practices of life. Constitutive rules define a practice or activity and formulate what we need to do, may do, and may not do in respect of it, such as the rules of a game, acting and speaking politely, and, in the case of moral rules or laws, of how to conduct ourselves in life generally. Technical rules and those of skill formulate how we can achieve something or prevent it within the constitutive rules, such as keeping ourselves fit and healthy, making or mending something, running a business, and persuading others to act or think as we wish. Constitutive rules set the boundary conditions of a practice or activity, and the technical rules and those of skill offer ways of succeeding and avoiding failure in it.

3. Searle, Habits and Tacit Rules

John Searle argues that often we 'simply know what to do' and do not unconsciously follow rules, although he also allows that at times we do so and also that we may consciously follow them. For example, he finds it implausible to say that someone shopping with an explicit list of what to buy, has a desire in addition to the desire for the items she is buying, 'to follow the constitutive rules of money or that she is unconsciously following the constitutive rules of money?' (Searle, 1995, pp. 137-138). Rather, we often 'just know what to do, we just know how

1 On the development of awareness and cognition in children, see the many books by Piaget, especially Piaget 1929. Polanyi frequently cites Piaget.

to deal with the situation. We do not apply the rules consciously or unconsciously'. (Searle, 1995, pp. 142-3).

'Just doing it' is typical of mere habits which are relatively simple and unchanging actions such as scratching the head when puzzled, saying 'like' after every three words or so, or crossing the road at the same place every day on the way to work. They can appear to be indistinguishable from following a rule, because both consist in repeating the same respective action. But to conflate them is to take a wholly external view of them, and not to reflect upon our own experiences which inevitably include those of others. We may be unaware that we have such habits, though we can find some hard to break. Moreover, because habits are not essentially normative, they differ from actions which follow rules. But some habits are good in one way or another and others are similarly bad. In such cases, I suggest that the good ones have been explicitly cultivated while the bad ones would have been explicitly given up. In both cases, as with all learning, the rules can be so interiorised that we apply and follow them in doing what they enjoin or abstaining from what they forbid, without any explicit awareness of what we are doing.

In any case, some habits, and probably all, are regular actions which rely on learned skills. For example, the habit of always crossing at the same place, depends upon learned abilities to walk and judge the speed and distance of oncoming vehicles and thus whether it is safe or not to cross there and then or to wait until they have passed; and, in the latter, learning early in infancy that certain things moving in front of us belong to us because we can immediately control them and direct them to other things, including other parts of ourselves. Thus they are not automatic reflexes ('unconditioned' ones in Behaviourist jargon) such as sucking whatever touches our lips or random smiling, which in sighted infants becomes directed to perceived smiles and dies away in those born blind, but, on the contrary, they are acquired by the exercise of intelligence in *re*cognising that objects and events are like previous ones, and also when they are one and the same object. Thus, as argued above, they are the result of the tacit recognition of regularities and then the acquired abilities to act upon them. Thus they are formed by the creation of tacit and partly tacit rules and exercised by the wholly or partly tacit following of those rules. Finally such rules are ones of achievement, which themselves can be right or wrong, and, if right, rightly or wrongly performed, as scratching the head too hard or misjudging the speed and distance of an oncoming vehicle. Hence, like all rules they are normative. Of course no rule is wholly exhaustive, as Searle says in the second passage just cited, except perhaps some very simple ones. But again, application is itself a learned skill which is either tacitly performed from the start or guided by some explicit remarks, such as to look out for some known exceptions which themselves have been tacitly inferred from the examples which have been tacitly noticed. Consequently, I see no reason to deny that rules with normative aspects can be and are tacitly followed even by beings with lesser degrees of intelligence, perhaps even right down to the lowly earthworm, which takes 60 to 80 wrigglings up a forking tube to learn not to go up the tube which gives it an uncomfortable shock.

This is the fundamental difference between mere habits and tacitly followed rules: that the former are particular actions that are simply done and repeated whereas the latter are generalised and Searle's mention of the constitutive rules of money is an example of what Collingwood called 'absolute presuppositions', which he derives from his 'logic of question and answer' according to which the meaning of a proposition is a function of the question to which it is an explicit or tacit answer (Collingwood, 1940, Chaps. IV and V). 'Relative Propositions' are those which are the prepositions of given propositions and themselves also have their presuppositions, whereas 'absolute' ones do not have any further presuppositions. The practitioners of any science (or practice) when thinking logically about it, ask and answer questions about its relative presuppositions, but, in Collingwood's reformed metaphysics, it

is the task of philosophers, specifically metaphysicians, to formulate its absolute ones from what its practitioners have said or written. Amendments, additions and qualifications need to be made to this account, but it will suffice for the present. The relevant point is that in daily life both types of presupposition, and especially the absolute ones, are taken for granted. They are *logically* presupposed by the practitioners but are often or even never, not *explicitly formed and known* by them. Practices, including the sciences, e.g. mathematics and its presupposition of set theory, may be developed long before anyone begins to reflect upon them and to formulate what they presuppose, let alone what they absolutely presuppose. Likewise explicit reflection upon scientific methods began only with Galileo, and those of history in the late 18th C.[2] Consequently, it is only to be expected that ordinary people will not have any idea that they make such presuppositions. It was centuries after exchanges, money and prices were commonplace that in the 18th C. people began seriously to theorise about them, above all Adam Smith, who founded the modern science of an exchange economy based upon the division of labour, and to formulate the fundamental laws of supply and demand.

4. Polanyi and Tacit Integration

Using the work of Michael Polanyi, I shall now and briefly show how all our thinking and action involves the employment of skills, and that therefore their rules necessarily have their tacit dimensions, and thus cannot be completely articulated, whether in words, diagrams, physical models, or by other means. From this Polanyi develops its many implications. I shall focus upon the epistemological ones of forming and following rules, which will inevitably involve reference to, and some further development of, at least some of them.

It is important to recognise that Polanyi goes beyond what many people over the ages have noted: that we can know some things without knowing that or how we know them, especially how to exercise the skills that we undoubtedly have. But most philosophers who have recognised this, have then continued to ignore it. Polanyi cites many examples from the natural sciences and medicine (he was internationally recognised as a leading figure in physical chemistry, and had trained as a doctor but practised medicine only as medical officer in the Austro-Hungarian army in the First World War), the psychology of perception, engineering and everyday experience. But they are preliminaries to the central conception to which his previous philosophical writings had led and then which would form the basis of all his subsequent ones.

Phenomenology, following Brentano (Brentano, 1874/1973), has rightly stressed the intentionality of mind: that mental acts and functions have objects: no knowing without something known, no willing without something willed, no desiring without something desired, no loving or hating without something loved or hated. Polanyi goes one step further and formulates an account of all mental functions and acts as having a double intentionality, though he does not refer to it as such. Instead of 'A attends to B' in Phenomenology, Polanyi says, in effect, 'A attends *from* B *to* C'. This 'from-to' relation is a functional one: C is the *focal* object of attention, and B is the set of *subsidiary details* which we use as clues to the apprehension or performance of C. For example, a blind man using his stick does not pay attention to the impressions which the stick makes upon the palm of his hand but uses them as clues to what the other end of the stick is touching and thus to what is in front of him (Polanyi, 1960, pp. 55-6). Likewise when learning how to drive a car, we have to learn to shift our attention *from* our hands and feet, the pedals, gear-stick and steering-wheel, and *to* the road and the traffic ahead. Our *focal* awareness of our hands, feet and the instruments we use,

2 Of course, Herodotus and Thrasymachus did reflect upon their methods, but relied only on memories, their own and those of others.

is replaced by a *subsidiary* awareness of them as we use them to attend *to* where we are going, of which we then have a focal awareness. Likewise in learning to understand what is spoken or written in a foreign language, we have to shift our attention *from* the sounds of the words or shapes of the letters and *to* what they mean. This is especially noticeable in the cases where the same word, spoken or written, has several meanings.

Even the simplest act of perception, such as seeing an apple, which we take wholly for granted and appears to take no effort on our part except opening our eyes and looking, is the result of efforts in and since infancy to make sense of what we see, hear, feel smell and taste, and thus to recognise similarities and differences among the objects we perceive. Apples do vary in colour, size and taste, and to someone who has never seen them before, it may take time to be able to distinguish them from similar objects such as some potatoes (*pommes* de terre) or tomatoes. In doing so, we carry forward clues, such as the characteristic shape, on which we have not focused but which we have tacitly recognised and now tacitly apply in seemingly instantaneously, effortlessly and casually recognising an apple for what it is while looking for something else. All this based on previous efforts to recognise the recurrence of the same sort of object, and then the same object, above all, to recognise the face and its smile which regularly return.

It is important to understand in all this that nothing is subsidiary or focal in and by itself, but only as, respectively, we attend *from* the former and *rely* on it in order to attend *to* something else. '*We know the first term only by relying on our awareness of it for attending to the second*' (Polanyi, 1966, p. 10). The relation is an essentially functional one. Thus what was focal and to which we attended, the word itself, then becomes subsidiary to its meaning. Conversely the word becomes again the focal object when we revert to attending to it when suspecting that it may be incorrectly spelt or pronounced or not the apposite word in this context. Polanyi cites many examples of subsidiary and tacit attending *from* in order to attend *to* a focal object: the invisible signs by which a psychiatrist could distinguish genuine from hysterical epileptic seizures, and the mere humps and hollows, when seen on the ground, but which aerial photographs showed to be traces of prehistoric settlement (Polanyi, 1996, p. 123); the features by which we can pick out a familiar face from many others but which we usually cannot recognise when shown them one by one, as when a photograph is cut up (Polanyi, 1966, pp. 4-5; Polanyi, 1969, p. 123); people learning to anticipate electric shocks which come after only certain nonsense syllables among groups of others, but having no idea that they did brace themselves nor as to which syllables they responded (Polanyi, 1966, pp. 7-8); the way in which swimmers remain afloat—by not emptying their lungs when breathing out and by inflating them more than usual when breathing in, but without knowing that they do this (Polanyi, 1960, pp. 49-50); and maintaining one's balance on a bicycle by steering to the side to which one is falling in order to produce a centrifugal force to counter the force of gravity pulling one over, again with knowing that this is what one does, which Polanyi himself worked out for the first time (Polanyi, 1960, pp. 49-50). But if we shift our attention away from the focal whole and to the subsidiary details of the action or object, then we shall cease to apprehend the object, and our performance of the action will breakdown, if not immediately, then soon. Such clues can be classified as (a) details of the object of attention, such as the facial features, stance and tone of voice which express a person's attitude, emotion, desires, etc.; (b) the context linking ourselves to the object, such as a drama or story and not a real event nor history nor a deception; and (c) what we bring from ourselves, such as our memories, expectations, and emotions evoked by the object.

At times the details can be known, if not by the persons who attend from them, then by observers who attend to what they are doing, such as the experimenters in the example just cited or a sports coach who attends to his own actions as well as those of other players in

order to become explicitly aware of what succeeds and what fails. Such 'destructive' analysis can bring to explicit awareness and formulation what was previously only tacitly known by the practitioners of the relevant skills and crafts (Polanyi, 1960, pp. 50-2). Nevertheless, the explicitly known and taught rules have to be applied and integrated into the whole action or procedure, which cannot be done by yet further explicitly known and taught rules but only tacitly and learned by practice. For example, as Polanyi said, no one can explicitly apply the rule which he formulated for keeping a bicycle upright.

As mentioned above, when we practise a skill more fluently and successfully, so we conversely become less aware of its details and of any explicit rules we were taught, so much so that we can be unable, or only with an effort, to recall their explicit formulation. Moreover, we can practise at least some skills while thinking of something else entirely, such as driving with due care along a familiar route while thinking about something else, so that, when returning to focusing upon our driving, we have no memory of what happened and what we did at that time. Yet we are confident that we drove correctly and would have responsibly and immediately responded to any emergency, which would also have simultaneously redirected our attention to it.

5. The Formulation and Transmission of Tacit Rules

From the above two further questions arise: How can rules be formulated? and How can rules which are known only tacitly, be taught?

As has been shown, all rules are either formulated from attending to successful performances of what is already practised wholly tacitly, or depend upon such rules. The most obvious are those of languages. Highly complex ones such as Greek were spoken for centuries before the first rules, and lists of exceptions, were explicitly inferred from what people actually said and from their judgements of what was correct or incorrect. Once explicit rules of the mother tongue are formulated, then they can be taught formally, and artificial languages such as Esperanto, can be invented—it is notable that Esperanto, as its name implies, is based on Spanish. But every rule has to be tacitly judged to apply or not to each apparent case. Exceptions can often be classified in a sub-rule, such as occasions when it is right to overtake other vehicles by driving on the wrong side of the road and the moral sub-law of choice of the lesser (or least) evil when even doing nothing would be an evil as well as all the feasible actions in the situation at hand. But it still requires the personal judgement of the person in that situation to judge which is the lesser or least evil and just how to realise it in the particular situation. No casuistry of any kind can ever be complete, not only because of the infinite progress of having further rules for applying every rule, but also because no set of rules can provide for novel events and situations. That we tacitly, or 'implicitly' or 'unconsciously', follow such rules, wholly so in the long evolution of language and in each individual case, is beyond doubt. But to show how this is done, it will be better to use some of the examples already cited, because in them we tacitly infer a rule from an observed or felt regularity: that after a certain group of syllables, otherwise insignificant in themselves, an electric shock will occur; that by turning the handlebars in the opposite direction we can correct the increasing leaning of a bicycle to one side; and that by not emptying our lungs when breathing out and by inflating them more than usual when breathing in, we can stay afloat. It is important to note what is happening in these examples: that we are *not following* a rule at the outset but are *coming to recognise* a regularity, either in something apart from ourselves or in our own actions which, with practice, then become tacit rules which we tacitly follow. Only later still can we or someone else observe and experiment with what we do, and then formulate an explicit rule or set of rules which we may be able explicitly to apply.

6. The Transmission of Tacit Knowledge Which Cannot Be Made Explicit

It would seem that what one person knows only tacitly cannot be communicated to others. But in the example mentioned above, the expert on epilepsy knows that he cannot tell how he distinguishes genuine and hysterical epilepsy by means of subtle clues to which he cannot point. He therefore urges his students to attend to his practice of that skill and so they eventually will acquire the tacit ability to distinguish the two forms, and then to become models from whose practice their students will tacitly learn the skill. This relation between expert and pupil is that of master and apprentice.

In turn the transmission of tacitly acquired and practised skills across the generations requires a living tradition of masters and apprentices, and of some of the latter becoming masters, without which all the tacit elements of practical knowledge would be lost, and any textbooks, which can include only the explicable elements, would be useless and perhaps meaningless (Polanyi, 1958, pp. 50-3). For example, the initially liberal phases of the French Revolution failed because none of politicians had any experience of conducting politics, and especially by doing so with free debate, mutual respect and compromises. In addition, too many were dominated by abstract schemes to be forced on reality, rather than by the formation of concrete measures by reference to the practicalities of the current situation. This was the inevitable result of the corralling of the aristocracy in Versailles, who were made powerless while retaining their privileges, and of personal rule by Louis XIV and Louis XV via senior clergy and technocrats made *noblesse de la robe*, which reinforced social divisions and deprived France of a body of men with the position, attitudes and skills needed for a more constitutional, consultative and representative form of government.

7. Further Epistemological Implications of the Tacit Dimensions of Normative Rules

That all rules have essentially tacit and unspecifiable foundations has important epistemological implications, and further ones for such human activities as morality, law, education, arts and crafts, medicine, technology, intellectual disciplines, and social life generally. For it is the foundation of all awareness and knowledge, from that of the lowly earthworm which takes 60-80 wriggles up a forking tube to learn that up one of them it will feel an unpleasant sensation and thus does not go up it again, to the most developed of our natural and human sciences today. It constitutes all the awareness of animals and that of the human infant. The latter, having few 'instincts', that is, pre-formed habits, has nearly everything to learn and initially experiences a series of confusing and kaleidoscopic experiences of which he tries to make sense by coming to recognise recurrences in it, recurrences both of the same sort of thing and of the same thing. This is the truth of Plato's *Meno*, that *a priori* knowledge is a remembrance of apprehending the Forms in a previous life. In fact, all knowledge begins with and depends upon recognising regularities. That means that all cognition is *re*-cognition. In turn, that means that there is no clear line between knowledge and, say, confident belief, tentative belief, estimation, intelligent guessing, and blind guessing. They could be arranged in a scale of forms of knowledge, with blind guessing at the bottom and full knowledge at the top.[3] But nevertheless explicit knowledge still rests upon tacit knowledge, and, if knowledge were wholly distinct from belief, it would incur the infinite regress of, 'Do I really know or merely assume that I know?', etc., etc. 'Justificatory' or 'critical' philosophies, which aim at finding tested and secure bases for our knowing, cannot but beg the very question from the outset. Thus the Empiricist search for a method, an explicit rule, for distinguishing memory images from illusions, true from false ones, presupposed all along that we can and have already sorted out some genuine and some false ones, and, furthermore,

3 See Collingwood, 1933, on philosophical scales of forms in which the essence itself is the variable, from almost zero at the bottom to the full realisation, either absolute or reached so far.

that we can now genuinely remember them and can rightly tell which were genuine and which were false. Likewise, Descartes, Kant and others cannot but *a*critically rely upon the very meaningfulness and appropriateness of the Latin, French, German or other languages which they employ. We can doubt if we have used the right word, *le mot juste*, for what we are trying to say, which itself disproves any claim that there is no thought without language and so that all thought must be explicit, but we cannot doubt and test each word, but must again *a*critically rely on those which we are employing and our judgement of their appropriateness, plus yet again upon our memory of what we have already learned of that language.
The 'standard' account of knowledge, as 'justified true belief' or 'true belief supported by evidence', cannot cope with evidence which cannot be specified. As already noted, the experts in any field of human activity cannot point to some of the clues by which they make their judgements, and likewise connoisseurs in their fields of expertise. It is not enough for a doctor to read about a given symptom, but he must personally know it, for which he must experience cases where it is authoritatively known to be present and ones where it is absent, and thus he can demonstrate that he knows the difference in practice to the satisfaction of expert.

> The large amount of time spent by students of chemistry, biology and medicine in their practical courses shows how greatly these sciences rely on the transmission of skills and connoisseurship from master to apprentice. It offers an impressive demonstration of the extent to which the art of knowing has remained unspecifiable at the very heart of science (Polanyi, 1960, pp. 54-5. The same applies to mathematics, p. 125).

The only 'justification' or 'evidence' that can be given is *post facto* success, but that may well be something that the expert alone can judge.
In general, claims to know something cannot be dismissed simply because the person concerned cannot explain why he believes what he has said, while some people, like those whom George Orwell called 'the silly-clevers', who are highly knowledgeable in some special field but have lost all common sense and contact with reality, can produce all sorts of arguments to support their opinions, which the 'plain man' can counter only with a reassertion of his convictions and keeping to himself his suspicions that their arguments are specious. At some point we all fall inarticulate.

8. The Rule of All Rules

Finally, we come to the ultimate 'absolute presuppositions' of all our thinking and action: that there is a real world around us and that it is ordered, therefore intelligible, and therefore we can discern and infer regularities in it, without which knowledge, intelligence and life itself would be impossible. Thus the rule of all rules is that by which we recognise regularities, primarily tacitly and then, but not always, explicitly: namely, induction.
J.S. Mill was right in saying 'all our knowledge, not intuitive, comes to us exclusively from that source' but which 'professed writers on logic have almost entirely passed over. (Mill, 1882, Bk III, Chap. II §1.) Induction has always been the recalcitrant and illogical prerequisite of all formal logic, and thus it is the bane of rationalists who put their faith in formal logic and necessary entailment. All the sweeping syllogisms of Aristotelian and Scholastic logic, all the 'if-thens' of later logic and the universal quantifier in symbolic logic—'for all values of x, x', rest upon what no logic can prove or 'justify' but can only presuppose, that valid general and universal propositions can be made. Philosophers like J.S. Mill have tried to 'justify' induction, but have inevitably had to assume this in their very 'proofs'. Mill's attempt inverted both the epistemology and the logic. He acknowledged that 'the proposition that the course of nature is uniform, is the fundamental principle, or general axiom of Induction', although it cannot be the explanation of induction. Instead he held it to be itself an instance of induction, 'one of the

last, or at all events one of those which are latest in attaining strict philosophical accuracy', but only a few philosophers have recognised it for what it is, while later laws of nature were discovered by using it, previous and more recognisable ones were found without its explicit use as a premise. (Mill, 1882, Bk III, Chap. III §1.)

Mill rightly grasps that the principle of induction is the foundation of all our knowledge, but has the categories only of induction and deduction, and therefore, since induction is not deduction, concludes that it must be itself an induction. He therefore immediately lands himself in having to assume the validity of the very process which he is seeking to validate. What he cannot conceive is that it is an absolute presupposition, not just what I have called a 'Regional Absolute Presupposition', which is what Collingwood himself discussed, that is, one of a given intellectual discipline or of a practice, but a 'Global' one of all our thinking and action (Allen, 2019; Collingwood, 1940). Global Absolute Presuppositions cannot be coherently doubted nor justified precisely because they are global. Thus what Mill presents as a justification of induction is really an account of how we modify those which we do make, and thereby increase or decrease our confidence in them, by recognising exceptions and that some are themselves are regular and others not so. Indeed, the only conclusion we can come to about some people is that they are completely unreliable, constant only in their inconstancy. Mill's justification of induction is also a rough history of how any body of knowledge develops, with, as Mill rightly says, the explicit formulation of its presuppositions appearing only at a late stage.

Polanyi develops further epistemological implications of tacit integration into a 'post-critical, fiduciary and fallibilist philosophy which is self-coherent. Furthermore he develops its ontological implications. For by means of it we integrate, among other things, the subsidiary details into the apprehension of comprehensive entities, such as mounds and hollows into archaeological sites, and the performance of complex actions, as when playing tennis. All these depend on our fundamental ability tacitly to recognise regularities in the world around us and likewise to follow rules in our cognition and actions. Finally, the ontological consequences result in a multi-level universe in which the laws or rules of each higher level determine the boundary conditions of the next lower level, with personhood as the highest level of all.

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GIUSEPPE LORINI
University of Cagliari
lorini@unica.it

CORPOREAL DRAWN NORMS. AN INVESTIGATION OF GRAPHIC NORMATIVITY IN THE MATERIAL WORLD OF EVERYDAY OBJECTS

abstract

Starting from the ontological question of norms, namely from the question "What do we talk about when we talk about norms?", the author highlights the existence of thetic norms, that is, norms established through an act of normative production, which have not been formulated linguistically. Notably, the author focuses on drawn (or graphic) norms, that is those norms that do not arise from a linguistic formulation or from a linguistic representation, but from a graphic representation, from a drawing (for example, Ikea's diagram instruction manuals and traffic signs). In conclusion, the author examines a particular set of drawn norms, corporeal drawn norms, and investigates their essentially deictic nature.

keywords

drawn norms, graphic norms, normative drawnings, normativity, non-verbal norms, thetic norms, corporeal norms, deicticity

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1. Thetic norms vs. athetic norms

A few years ago, John Searle (2010, p. 5) wrote that "philosophical disciplines are not eternal". Philosophy of normativity is evidence in support of this view. It was not until the twentieth century that norm and normativity became fully-fledged autonomous and specific objects of philosophical investigation.[1] Notably, in the twentieth century, philosophers, logicians, jurists and sociologists questioned the nature of norms, asking themselves a question (which echoes the title of a well-known book by Raymond Carver: *What we talk about when we talk about love*): What do we talk about when we talk about norms? This is one of the fundamental questions of philosophy of normativity, the matter of the ontological status of norms: What type of entity is a norm?[2]

Some of philosophers of normativity have conceived norms as "linguistic entities" and have investigated them starting from their linguistic formulations, that is from the *sentences* (in German: *Sätze*) that express them. Basically, even the deontic logic elaborated by Georg Henrik von Wright in 1951 was born as an investigation on the logical relations between norms intended as linguistic entities and more precisely as "deontic propositions".[3] In this regard, the definition of norm offered by Norberto Bobbio in the book *Teoria della norma giuridica* (A theory of legal norms) is quite exemplary:

> A norm is a proposition. A code, a constitution are a set of propositions. [...] By "proposition" we mean a set of words that have a meaning as a whole.[4]

A similar characterisation of norms as verbal norms was proposed in the book *Rules. A Systematic Study* by Joan Safran Ganz, who asks: "To what does the word 'rule' refer?" Ganz succinctly replies to this question: "Rules can be utterances as well as inscriptions, and "rule"

1 For an interesting reconstruction of the origin of the term 'norm', see Orestano (1983).
2 And in particular, see Conte (1974, 2007). The first section of the anthology *Filosofie della norma* (Philosophies of norms), published in 2012 and edited by Lorenzo Passerini Glazel and myself, is dedicated to the question of the ontological status of norms. The section is entitled *Ontologia della norma* (Ontology of norms). Recently, a special issue of "Phenomenology and Mind" was published on the subject, entitled *Norm: What Is It? Ontological and Pragmatical Perspectives*, edited by Paolo Di Lucia and Lorenzo Passerini Glazel.
3 See von Wright (1951, 1957).
4 Bobbio (1958, p. 75).

refers to both utterances and inscriptions".[5]
These philosophers mostly had in mind those types of norms that Czesław Znamierowski in his book *Podstawowe pojęcia teorji prawa. Część pierwsza: Układ prawny i norma prawna* (Fundamental concepts of the theory of law. First part: Legal system and legal norm) calls "thetic norms" (in Polish: *normy tetyczne*)[6], namely those norms that are the product of a *thésis*, of a decree issued, of a "nomothetic act" (for example, an order or a legislative act), such as the regulations of the Italian Constitution.[7] Riccardo Orestano would have called them "proclaimed norms" (in Italian: *norme statuite*).
However, alongside thetic norms we also have "athetic norms" (non-thetic norms), to borrow an expression from Amedeo Giovanni Conte.[8] Athetic norms are all those norms that *are not* generated through a nomothetic act, or an act of decree. For example, the norms of folk laws are athetic norms, and more generally, so are the customary norms of spontaneous social systems. For example, the rules surrounding mushroom and truffle picking, which for hundreds, or perhaps thousands, of years have regulated wild mushroom picking in the woods of Lombardy and Piedmont, are athetic norms.[9] The norms of the folk law of the Barbagia region of Sardinia, investigated by the Sardinian jurist and philosopher Antonio Pigliaru in his book *La vendetta barbaricina come ordinamento giuridico* (Barbagian revenge as a legal system), are also athetic norms. In 1959, Pigliaru studies the set of customs that revolves around vendetta and governs the lives of the shepherds from the village of Orune on the Italian island of Sardinia, reconstructing these customs in the form of the "Barbagian Code".
These rules clearly do not arise from a nomothetic speech act by an unlikely legislator, and their existence precedes their linguistic formulation. Customary rules already existed before they were formulated linguistically. These rules are originally devoid of linguistic formulations, although, as Theodor Geiger claims in his *Vorstudien zu einer Soziologie des Rechts* (Preliminary studies for a sociology of law), they can subsequently find linguistic expression in a codification or even a proverb.[10]

2. A subset of thetic norms: *non-verbal thetic norms*

However, not all thetic norms are also necessarily verbal norms, just as not all non-verbal norms are necessarily athetic norms. This is a very important point. It must be emphasized that the thetic acts that produce norms are not necessarily all "speech acts". An interesting subset of thetic norms does in fact consist in "non-verbal thetic norms". The latter are norms that are indeed established by a thetic act (by an act of decree), but which nevertheless do not arise from a linguistic formulation and are not verbally configured originally.[11]
I came across a curious case of non-verbal thetic norm a few years ago, at Mario Mameli

5 Ganz (1971, p. 13).
6 On the concept of "thetic norm", see Znamierowski (1924).
7 On the concept of "thetic act", see Conte (1986) and Lorini (2000; pp. 238-240).
8 Regarding the concepts of "athetic norm" and "athetic validity", see the essay by Amedeo Giovanni Conte *Validità athetica*, and its English edition, titled *Athetic Validity,* which can be found in the current issue of "Phenomenology and Mind". The English translation is by Lorenzo Passerini Glazel and Olimpia Giuliana Loddo.
9 See Sacco (1970).
10 See Geiger (1947). It is worth noting that, beyond these codifications, athetic norms can also be expressed in proverbs. Namely, "legal" proverbs often express the athetic norms that make up folk laws. As already noted by Émile Durkheim (1895, p. 12; Eng. trans. pp. 54-55), law, like other social facts, "by a privilege without example in the biological kingdom, expresses itself once and for all in a formula repeated by word of mouth, transmitted by education and even enshrined in the written word. Such are the origins and nature of legal and moral rules, aphorisms and popular sayings."
11 For an investigation into the nature of non-verbal thetic norms, see Lorini (2011).

Italian airport, near Cagliari. I was heading for the lounge area of a bar I used to sit down in for a quick meal before boarding, but I found the entrance blocked by a row of chairs. The row of chairs wasn't close enough to actually block the entrance. You could easily cross it as the chairs were about a meter apart. I asked myself: Why was this row of chairs here? Was it just a row of chairs devoid of any meaning? Clearly not. That row of chairs had a meaning, and a very specific normative meaning in fact: "Do not go beyond this line! Do not enter!". When had this norm been established, forbidding access to the lounge area? Quite simply, when those chairs had been lined up by some waiter to obstruct entrance to the lounge. When would the ban be lifted? When those chairs would be removed. There was no need for words here.

The phenomenon of non-verbal thetic norms has attracted the attention of at least four philosophers, who in the course of the twentieth century reflected on the nature of thetic norms and how they manifest, as they do not arise from a speech act and do not consist of a linguistic configuration. These four scholars are Felix E. Oppenheim, Hans Kelsen, Karl Olivecrona and Gaetano Carcaterra. Interestingly, all four focused on the investigation of two stop signs, two seemingly trivial phenomena that characterise motorists' everyday life: the red of the traffic light and the traffic policeman's stop gesture.

Oppenheim reflects on the phenomenon of non-verbal thetic norms in his essay *Outlines of a Logical Analysis of Law*. Here, Oppenheim (1944, p. 142) observes that "[l]egal rules, decisions, commands, are generally expressed by words of a natural language, like English". But, according to Oppenheim, there are also rules that are expressed through "non-linguistic signs", for example: (i) the whistle of a policeman; (ii) stoplights, (iii) a gesture made by a traffic policeman.

A similar observation appears in Kelsen's essay *Eine phänomenologische Rechtstheorie* (A phenomenological theory of law). Here Kelsen states that a norm does not need to be formulated linguistically. He says this in explicit relation to the stop gesture of a traffic police officer. Kelsen (1965, p. 355) states that a legal norm can consist of a simple gesture:

> That a legal norm [*Rechtsnorm*] need not be formulated linguistically, is demonstrated [...] in the fact that the act, the meaning [*Sinn*] of which is a legal rule [...], can also be a gesture [*Geste*]: with a specific movement [*Bewegung*] of their arm, a traffic police officer orders us to stop, and with yet another gesture, tells us to move along.

According to Kelsen (1965, p. 355), "the meaning of these gestures is a mandatory legal norm [*verbindliche Rechtsnorm*]". The same is true, according to Kelsen, for traffic lights.

The normative nature of traffic lights has also caught the attention of Olivecrona, who, in the second edition of the book *Law as Fact* (published in 1971), examines the phenomenon of non-verbal thetic norms in the framework of his theory of "independent imperatives" (in Swedish: *fristående imperativer*). Olivecrona (1971, p. 129) defines "independent imperatives" as imperatives that "are independent of the personal relationship characteristic of a command". He denies that independent imperatives are necessarily verbal norms (such as moral norms and legal norms). According to Olivecrona, in fact, there are non-verbal signs that have the function of independent imperatives. An exemplary case of a non-verbal normative sign is that of the traffic lights that manage traffic.

> It seems correct to include a number of mute signs, as for instance traffic lights. Even a fence around a garden or the lock to one's door may be said to have the function of an independent imperative. Usually neither the fence nor the lock is a physical obstacle of importance to an intruder. But both of them are signs to stop and keep hands off.

> If one looks at things in this way, independent imperatives of different kinds will be encountered at almost every step.[12]

Here Olivecrona seems to have identified a very interesting set of phenomena for the philosophy of normativity, which we could call "deontic artifacts", as we are dealing with material artifacts such as road signs, traffic lights, fences and padlocks that perform a "deontic function".

Carcaterra also reflects on the regulatory function of the traffic light and the traffic police officer's whistle in his book *Le norme costitutive* (Constitutive rules), published in a provisional edition in 1974 and reissued exactly forty years later, in 2014. In this book Carcaterra (2014, p. 19) explicitly takes a stand against the theory of the linguistic nature of norms when, after having supported the theory that norms are meanings, surprisingly and succinctly writes: "We conceive meanings and propositions as entities of a non-linguistic nature".[13] This theory of Carcaterra's is also highly relevant to the question Georg Henrik von Wright raises, namely whether all rules are *language-dependent*. Carcaterra writes (2014, p. 31): "I do not see the need for a linguistic requirement for prescriptive acts". With these words Carcaterra seems to take a stand against a "logocentric" perspective of norms.[14] For Carcaterra, the domain of normativity and normative phenomena goes beyond the framework of language with its written or oral statements. While calling them "marginal", Carcaterra actually also opens the investigation to "hypotheses of standardization that are expressed through a language that is non-verbal" like "the light of a traffic light, a road sign, the whistle of a policeman, a single trumpet blast". And he adds that "on certain occasions even a gesture or a glance can implement a normative act". In these cases, Carcaterra writes (2014, p. 7), "we will talk about a set of *signals* instead of sets of words and, if we want to, of *expressions* instead of utterances, and in the end there would be no difficulty in rethinking the rules more broadly, like the expressions used by the legislator". Here Carcaterra (2014, p. 23) draws our attention to what he calls "the significant structure of the act": "Norms are also, and indeed first and foremost the meanings of normative acts." And there are non-speech acts (which are not performed through utterances) that express norms.

Here are other examples of Carcaterra (2014, p. 32) which also show his "mindfulness" of the rich phenomenology of normativity: "a threatening silence, a warning act of violence, so-called demonstrative actions, a life complex kept with exemplary intent." I am reminded of the case of the Zen masters who teach the Dharma without words (it seems that Gutei, a famous Zen master, always answered his students by simply raising a finger); and the words of Palamon the anchorite who said to a monk asking him about the behaviour one should adopt with one's disciples: "Be an example [*typos*] to them and not a legislator [*nomothetēs*]."

12 Olivecrona (1971, p. 129).

13 Perhaps, the origin of Carcaterra's theory lies in what Alonzo Church writes in the essay *Propositions and sentences*, 1956, where he makes a distinction between the traditional sense of proposition and a more recent abstract sense according to which the proposition would be the objective content of the meaning of a declarative statement. I owe this reference to Paolo Di Lucia.

14 See Maynard (2017). In this respect, the ontological hypothesis on norm offered by Rafael Hernández Marín (1986, p. 39) is interesting. According to this theory, a norm could be a "quasiproposition" (in Spanish *cuasiproposición*). This is how Hernández Marín (1986, p. 33) defines quasipropositions: "A quasiproposition is [...] a quasientity; it is like a proposition, but with the difference that it can exist without a statement that expresses it."

3. A subset of non-verbal thetic norms: *drawn norms*

In the previous paragraph I named and examined some examples of non-verbal thetic norms. To continue with the investigation of non-verbal thetic norms, I would now like to start with a philosophy of drawing question:[15] can a drawing perform a normative function? In other words, we could ask ourselves: besides descriptive drawings, are there also deontic drawings? A positive answer to this question is suggested by an observation made by Ludwig Wittgenstein, which can be found in his *Philosophical Investigations*. Here, reflecting on the hypothetical communicative uses of a painting representing a boxer fighting, Wittgenstein distinguishes a normative use from a merely descriptive use. Wittgenstein writes (1953, § 23):

> Imagine a picture representing a boxer in a particular stance. Now, this picture can be used to tell someone how he should stand, should hold himself; or how he should not hold himself; or how a particular man did stand in such-and-such a place; and so on.[16]

Thus, according to Wittgenstein, a picture that represents a boxer in a certain fighting stance can express an Ought, can tell someone how to hold himself during a boxing fight. Here is a first example of a deontic drawing.

A second example of deontic drawings has been a theme for urban planners, particularly in relation to the investigation of the nature of urban plans. As Stefano Moroni points out, in the book *Urbanistica e regolazione* (Urban Planning and Regulation), while questioning the nature of an urban plan, "an urban plan is a set of propositions (analytical and) normative, drawn and written by means of which rights are recognised or established, and rules of production and consumption of the physical environment are expressed".[17] In this definition of urban planning, a contrast appears between two types of normative propositions that make up an urban plan: "written" normative propositions and "drawn" normative propositions.[18] The idea that there are normative propositions that are expressed not by sentences but by drawings is particularly interesting for my investigation.[19]

The following is a third example of a deontic drawing:

15 The origin of the recent discipline of the philosophy of drawing is to be found in Patrick Maynard's book *Drawing Distinctions. The Varieties of Graphic Expression*, published in 2005.

16 There is a curious reference to the use of photographic images in statutes in Radin (1930, p. 871).

17 Moroni (1999, p. 15).

18 The hypothesis that drawn normative propositions exist was recognised in 2001 by another urban planner, Patrizia Gabellini (2001, p. 429), who introduced the expression 'figurative norms' (in Italian: *norme figurate*).

19 From Stefano Moroni's definition of urban plan, a contrast transpires between norm as "linguistic form" and norm as "graphic form". On normative drawings in urban planning, see Moroni & Lorini (2017).

These are graphic instructions, technical norms, for the assembly of a piece of furniture from the famous Swedish company Ikea.[20]
A fourth example of a deontic drawing is the following:

It is clear that this is a sign that prohibits smoking.
These non-verbal thetic norms that do not arise from a linguistic formulation, nor a linguistic representation, but from a graphic representation, from a drawing, can be called "drawn (or graphic) norms".[21]

4. A subset of drawn norms: *corporeal drawn norms*

In the previous paragraph I examined some examples of drawn norms. Further examples of drawn norms are normative road signs: for example, the triangular sign that requires drivers to give way at a junction, the round sign with a white arrow on a blue background that requires drivers to follow the direction of the arrow, the no stopping sign.[22]
It is precisely from the image of a no stopping sign that I photographed a few years ago, in a street in Cagliari near the Law Department, that I would like to start the investigation of a subset of the drawn norms.

20 For an interesting study of Ikea's graphic instructions from another point of view (from the point of view of the pragmatics of pictorial communication), see Frixione & Lombardi (2015).
21 On the specific subject of drawn norms, see Lorini (2015), Lorini & Moroni (2017), Maynard (2017), Moroni & Lorini (2017) and Lorini & Moroni (forthcoming). On the topic of this term, a curious document is the definition of "drawn norm" that appears in article 57 (entitled: *Drawn norm - definition*) of the General Project Report for Changes to the Urban Development Plan (also known as Z.F.U.) of Erice (Italy), adopted on 8 February 2013, proposed by the architect Francesco Tranchida: "By 'drawn norm' we mean a set of criteria and prescriptions, accompanied by one or more graphical diagrams, which summarise the aims of the individual transformation projects foreseen by the guiding framework, the principle and settlement rule to be respected, the quantities of public and private land to be dedicated to different types of use".
22 Loddo (2017) also suggested the existence of a "drawn constitution", examining curious normative drawings in Freetown Christiania. Other interesting examples of deontic drawings such as musical scores and maps of the Route of St James to Santiago de Compostela were investigated by Smith (2013).

What is strange about this no stopping sign? Clearly this is a torn up, uprooted road sign, a phenomenon that offers an interesting starting point for a reflection on the ontology of drawn norms. The phenomenon has already caught the attention of Karl Olivecrona, who in the essay *Lagens imperativ* (The imperative of law) writes: "The road sign [*vägskylt*] has no imperative character [*imperativ karaktär*], when it lies in a pile with other signs at the painter's workshop, or when it is buried in a hole in the street. However, when located in its rightful place, we understand that it is located there to regulate traffic"[23]. Olivecrona emphasises a fact that seems obvious: a road sign, like a traffic light, carries out its regulatory function only when it is "in its place".[24]
But there is more to it, as Franciszek Studnicki pointed out in his essay *Traffic Signs*: the up-rooted road sign also makes us reflect on the deictic nature of road signs. Studnicki (1970, p. 155) writes:

> The peculiar property of TS [Traffic Signs] system, consisting in the fact that each of its signs: (a) carries information referring to a certain section of a road and, at the same time, (b) indicates by its geographical position the section of the road to which that information refers, I shall call "the deicticity of the TS [Traffic Signs] system".[25]

As Studnicki points out (1970, p. 155), road signs are "utterances having fully defined meanings only when the geographical positions of the sign of which they are composed are taken into consideration". In other words, the normative meaning expressed by a road sign is complete only in relation to what Karl Bühler calls the *origo* of the signal, that is the place where the sign was placed into the ground. Normative road signs are deictic signs, and as such they need a space-time *origo*. This space-time *origo* is determined by the action of driving that road sign in the ground. A torn down road sign is a sign devoid of *origo*, without space-time coordinates: it is an "unsaturated" deontic sign.
Thus, what Bühler writes in his book *Sprachtheorie. Die Darstellungsfunktion der Sprache* (Theory of language. The representational function of language) is also essential to the meaning of the road signs, and refers to the "symphysical field" (in German: *symphysisches Umfeld*) of a sign. In this work, Bühler (1934, p. 159; Eng. trans. p. 179) investigates the phenomenon of names that signify insofar as they are "*physically attached* [*dingfest angeheftet*] to what they name". The symphysical field is the material element to which the names are associated. For example, "[b]rand names are stamped on products, place-names are written on signposts and objects are 'signed' with the proper name of the owner or marker". He adds: "[t]he titles of books and of chapters, laconic names inscribed on pictures and memorials are all also physically connected and affixed to what is named".[26] These names "require the reader to follow deictic instructions to find the thing named".[27] For example, in the case of the brand name appearing on a sweater, the symphysical field of this name is the sweater itself. If it were not physically connected to the sweater, the name would lose its semantic function.
Also in the case of normative road signs, normative drawing and symphysical field are "materially connected" by a metal rod that acts as a material support of the deontic drawing and is inserted into the ground. The symphysical field of a normative road sign is the area

23 Olivecrona (1942, p. 24).
24 On norms in place, see Lorini & Loddo (2017, pp. 205-209).
25 On the deicticity of road signs, see Lorini & Loddo (2017) and Stjernfeld (2019). On the deictic function of material signs and on their symphysical field, see Mulligan (1997).
26 Bühler (1934, p. 159; Engl. trans. pp. 179-180).
27 Bühler (1934, p. 161; Engl. trans. p. 182).

crossed by the road in which it is driven into the ground. One could therefore say that normative road signs are, borrowing the expression of Edmund Husserl in *Erfahrung und Urteil* (Experience and judgment)[28], "embodied norms" (from German: *verkörpert*), as they are embodied in a material substrate: they are "corporeal norms".[29] These norms presuppose a physical support, although they do not coincide with it (they do not exhaust themselves in it).[30] Within its symphysical field, every normative road sign refers to a specific spatial portion that it deontically connotes. In the essay *Thinking of norms spatially*, Olimpia G. Loddo and I have called this spatial portion on which the corporeal norm performs its deontic function "spatial sphere of reference of a norm".[31] In the case of deontic road signs, the spatial sphere is determined by the *origo* of the corporeal norm, that is by the place where the road sign is attached, together with other elements connected to the highway code: for example, the direction one is driving in, the lane one is travelling in, the right side of the road (for countries in which they drive on the right), the presence of other road signs that interrupt the norm's spatial sphere of reference.

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28 See Husserl (1948, pp. 317-325).
29 These norms are *res corporales* in the lexicon of the Roman jurist Gaius. See Gaius (1904).
30 See the concept of "idionomic norm" proposed by Lorini (2011, pp. 1973-1974).
31 Lorini & Loddo (2017, pp. 203-205). In this essay, starting from Hans Kelsen's famous concept of "spatial sphere of validity" (in German: *räumlicher Geltungsbereich*) of a norm, Loddo and I distinguished two different kinds of "spatial spheres of norms": a spatial sphere *of validity* and a spatial sphere *of reference*.

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SECTION

SECTION 2

IMAGES AND RULES

PATRICK MAYNARD
University of Western Ontario

RULES: A TOY BOX

abstract

"Induction provides a path to first principles" (Aristotle): so we approach our topic by sampling three distinct sorts of data—rules in actions as exemplified in games; rules as directives for manufacture; as laws not only for maintaining order among people but also relations between citizens and governments—finding in each case the parts that nonverbal expressions of rules play. While words are essential to formulating constitutive rules defining sporting games, they seem less important than emulation for recreational uses. They drop out in children's games of make-believe, which developmental psychology shows to be crucial to early development, since ours is a naturally rule making and following species. Industrial artifacts, thereby the modern world, depend on graphic systems, here exemplified by origami notation, which feature isolation and sequence in simultaneity, lacked by words. Such notations also exhibit a five-order pattern of intentionality, whose importance is demonstrated by communication breakdowns in road signage, undermining civic life.

keywords

rules, directive signs, road signs, artifacts, games, make-believe, child development, orders of intentionality, civility, Vygotsky, Walton, Tomasello, Hobson, Ardizonne, origami

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When we think about rules, we tend to formulate examples in terms of their contents, for which language provides unequalled resources—more so when we do this in terms of laws, even more, inscribed ones. The Laws of Moses, Hammurabi's Code, state constitutions, edicts and so forth easily come to mind, and colloquialisms such as 'not carved in stone' and 'unwritten law' suggest what could be. Yet, as with most human affairs, when it comes to concrete cases, especially those dealing with implementations of rules, even laws, matters are not so tidy and therefore more interesting. This comes forward when we consider rules in connection with the focus of our issue, the places that graphic signs play in our use of them. So rich is this subject that the present essay consists in examination of three rather disjoint, familiar cases in which situations beyond words are crucial to rule-guided behavior. The first stresses behavioral aspects of human nature that precede sign-formulations, while the latter two deal with purely graphic and then more complex, mixed graphic and linguistic situations.

1. Let's Play: Rules in Two Kinds of Games

Before laws, we should consider the more general category of rules. A relaxed example of them might be rules for *games*—which we begin with a charming source: Figure 1. Here the artist, Edward Ardizonne, sets before us three interlinked examples of human behavior, which might reward close attention as a first inductive array, displaying the breadth of rule-governed behavior. From top to bottom, let us take them briefly in turn, for what insights about rules they provide, before going on to the more 'serious' legal matters of Section 3.

Sporting-play games. At the top we see a formalized game, hence one that follows expressed rules. Badminton is half a millennium old, played throughout the world, even as an Olympic event (although indoors). In formal practice, its *constitutive* rules are indeed verbal, even written down for group consultation—including appeals—and are quite specific. However, as an informal, popular—even as here outdoor—sport, badminton's rules are relaxed so as not to include umpires, courts 6.1m wide by 13.4m long, net heights of 1.55m, or even some rules of play, such as serves being struck below server's belt-line. Indeed many players may never have referred to written or basically verbalized rules, but only picked the game up from others, by watching it, or by instruction that is a mix of speech, gesture, expression and displayed action. Considered in terms of artifacts, few have 'read the manual' for it. This reminds us that many of our rules are learned, 'picked up', by, as Aristotle wrote, our tendency to *direct imitation* of our fellows, which developmental psychology now holds to be not only species-specific but

Figure 1. © The Ardizonne Trust. Used with permission

important for much else.[1]

This is extended beyond games. Such *emulative* behavior brings out how, in a very loose sense, children's understanding and use of any artifact, beginning with their toys, is in terms of what Michael Tomasello (see note 2) terms 'intentional affordances'—that is, what the artifacts are *for*, for *us*, where 'us' denotes a community (from family to larger groupings) to which the child belongs, as the sense of a collective, consensual 'we' develops. Let us consider rules and affordances.

Affordances: Physical and Intentional

Going down the picture, we see that the boy is different from those above and below him in his use of artifacts. In terms of 'intentional affordances', the other three people have "socially learn[ed] the conventional use" of each artifact in terms of the prescribed outside end it is *for*. As well, since, apart from Suburbia's "so particularly blue sky" (Kenward, p. 28, before the Beatles), Ardizonne places them in a veritable (suburban) world of artifacts that people, unlike other tool-using animals, not only use to achieve outside ends but internal ones, for example

1 See Tomasello (1999) on 'emulative learning' in humans as opposed to other great apes, and Hobson (2002), Ch. Eight, specifically regarding child development.

It needs adding that, for instance, basketball provides a sharp contrast in the prominence of constitutive rules by words. The game was invented by one person, Canadian James Naismith, for a specific purpose, and set forth in thirteen constitutive entirely verbal rules in 1892 (*Rules for Basket Ball*), although in context of explanatory text and one illustration, regarding the spirit of the game. Still, its *popular* practice would seem to be like that of badminton.

in playing games. Our topic, games, are themselves a kind of artifact whose very existence is defined by appropriate use of artifacts—badminton not being volley-ball.[2]
This Ardizonne contrasts with the boy's uses of artifacts—a box and a fence-rail—for their *physical affordances*, as he might natural objects, without regard for their rule-governed intentional ones. (Ardizonne makes that clearer by placing beside the box a lawn-roller, which would not only be harder to stand on but make him more visible.) As the girl might say, were she to turn around, 'you're not supposed to do that!'[3] In the boy's action no rule is followed, since neither artifact is used as what it is '*for*, for us'. His artifact uses are ad hoc *improvisations* (possibly not good for the box, either)—very important uses that we cannot investigate here.
Before approaching the topic of the boy's creative neglect of norms, let us further consider the very existence and observance of any such norms, as related to rules. For that let us look back up to the badminton game. Just considering it carries us well into how the *Homo* species differs from great apes, thus presumably from its distant forebears.[4] For what we notice in that kind of game is '*joint intentionality*'—that is, of a kind of what Tomasello terms 'we-', or socially-collaborative, intentionality. This introduces roles.
In illustration, we may note that of the four people here depicted only the adult couple exemplify joint intentionality, since, beyond being involved in the "shuttlecocks rising and falling against the sky" (Kenward, pp. 27f), they share a joint *goal*, which gives them *roles*. Going beyond what is with small children called 'parallel play', we see them doing—indeed making—something together, called 'playing a game of badminton', likely by prior agreement and even plan. Thereby, besides noting the importance of *rules*, we may note that such formalized games have *roles*, roles which people who play them assume. For a child, such roles provide an important step towards a socializing 'agent neutrality'—a sense of what anyone in one's particular role would be 'supposed to do' or not do. Thus in such games we can 'spell' another, assume another's role. Roles go beyond rules. To stand there without trying—or only half-heartedly—to hit the shuttlecock back, is not to *play*, not to fulfill one's role, and thereby to let down the joint project of the game—even if this violates no rules of the game.[5]

2 That introduces an important issue of normativity into our discussion, notably through Michael Tomasello's remarks on a normative aspect of cultures, where everyone has "come to understand the intentional significance of the tool's use...—what it is 'for,' what 'we' ... do with it", a feature certainly underscored by suburban culture. What are racquets—what are they *for*? They are for hitting shuttlecocks while staying on opposite sides of a net—there are rules for this game. Tall fences are *for* privacy. While not following any such formal rules in her game, the little girl, too, knows what a doll is *for*, what 'we' (boys not included) are 'supposed to' do with them. See Tomasello, 1999, p. 6 etc.
3 Besides misusing artifacts, Ardizonne's boy would likely be corrected for violating what would have been, in that suburbia, unspoken rules of not peering over fences (as noted by the man), which one is supposed largely to 'pick up' by emulations, such as looking away.
4 Tomasello (2014, p. ix).
5 Accepting such roles are, in turn, cases of an even broader characteristic of human sociality. See Peter Hobson's eloquent citation (e.g. "the dance of human gestures and sounds") of Jerome Bruner on roles in early games like 'peekaboo': Hobson (2002 pp. 42f.)
As Tomasello reports, older, preschool children between ages one to three already "seem to have a species-unique motivation for collaboration" itself, beyond games. Young children will "engage with others in collaborative activities" and "coordinate a joint goal, commit themselves to" it until its reward is achieved, expecting "others to be similarly committed", while grasping—even helping with—the others' roles, then share the rewards—or else "take leave when breaking a commitment" (Tomasello 2014, p. 41).
We find these features in the badminton game, where 'taking leave' is a notable feature. Should a player wish to stop, briefly or permanently, we would strongly expect the player to 'take leave'—not, as we say, 'just walk away' ('wander off'). Unlike two year-old children, three year-olds tend to take leave when they break off, not only from informal games but from wider collaborative activities, joint projects, with at least acknowledgement, sometimes even explanation, apology. This is no small point: it may indeed be a species-specifying characteristic, first arising in our post-*Homo erectus* ancestors.

Rules and Make-Believe: Walton and Vygotsky

Down the picture from Ardizonne's transitional boy we find depicted another familiar and developmentally crucial kind of play using artifacts, but of a very different kind: in a game of 'make-believe'. A game, yes, but what could be its relevance to our topic of *rules*? Only one plays, and surely quite freely. In reply, without argument, there is only space to cite two impressive sources on the topic, the philosopher Kendall Walton, in his masterly study of make-believe, and the great Soviet developmental psychologist Lev Vygotsky, sixty difficult years earlier.[6] As Walton's account is worked out as part of a developed theory in a well-known and easily accessible book, I will quote briefly from short lectures by Vygotsky, some of which have been rescued for us by translators and editors, in order to make them better known.

Beginning with Walton's theory, make-believe appears as an important category within not only games but also imagining projects, indeed at an important intersection of the two classes, games and imagining. Let us start with *imagining*, which, as Walton points out—already in its vivid forms as dreams and daydreams—is much the broader class of activities. What is make-believe? The make-believe subclass of imaginings is picked out in terms of its enhancers and guides of imagining, '*props*', as Walton terms them ('pivots' for Vygotsky), such as the child's doll and attendant toys, and, Walton emphasises, including the imaginer herself and her interactions with the other props. Props provide the imagining with perceptually present and therefore vivid mobilizers (which, moreover, can be shared with others in group games), whose relevant *prop*erties determine (thereby provide guidance for) the course of the imagining.[7] What, after all, are the girl's toys *for*, given that she could simply imagine holding a baby? By use of artifacts, however, she provides what Vygotsky terms 'mediators', which work back on her through her perception of them. Thereby her wide panoply of sight, touch and kinesthetic visual and motor systems, with their many interconnections, evolved for dealing with her physical environment, is intentfully recruited, focused and turned back on her, to assist her game of imagining. As Vygotsky stressed, by use of the mediators, she thereby uses nature—nature as it exists in her body—for her own purposes, thereby achieving a kind of freedom from nature, which, paradoxically, comes with rules.[8]

One of Walton's important insights is that make-believe thereby also provides *guidance* to imaginative games. However selected, the relevant attributes of 'props' provide, interactively, *rules* for the ongoing game. Although this allows, as we know, great scope for makeshift props (e.g. broom hobbyhorses), it does restrict what in fact may function as an effective prop. To the extent that, in interaction with the imaginer, a prop's actual properties do not sufficiently prompt and direct the course of imagining, it fails as an artifact, since, as Walton puts it, generating rules is part of what it is *for*. Thus, as Vygotsky observes, "Goethe's contention that in play any thing can be anything for a child is incorrect" (Vygotsky 1978, p. 98), since there must be a basis in the prop for the crucial mental 'pivot' (Vygotsky 1978, pp. 97-102) of

6 See Walton (1990), Vygotsky (1978, pp. 92-104).

7 Use of Walton's term in this short discussion is for two reasons. First, Vygotsky's 'pivot' (1978, pp. 98-101) has much broader use in his account, having to do with the child's developing ability to 'detach' meanings from one context and 'transfer' them to another, as we shall see below. (See further Tomasello (1999, p.85), on 'decoupling' of affordances, citing Peter Hobson.) Second, the more restricted term 'prop' has the connotations of 'property' and 'ap*prop*riate', suggesting that attributes of it indicate what we are to imagine from it.

Here is a point to add that Walton does not use the term 'rules' in this context, but rather 'principles of generation' for what a prop's attributes 'mandate' or 'prescribe' imagining. See Walton (1990), e.g. pp. 38f.

8 Not to appear naive, we need to note how even that freedom is challenged by mass artifact prop technologies. Well beyond dolls and childhood, props as enhancers and guides to imagining constitute an immense class of artifacts, such as songs, novels, plays, moving pictures and other 'media' technologies, with vast economies and enormous psychological, social and political effects.

pretense. Like the racquet and shuttlecock in the other kind of game, these artifacts, too, must be 'fit for purpose', in physical affordances sufficient to what they are for.
Anticipating parts of Walton's make-believe theory—while missing Walton's crucial specification of make-believe within the broader range of imagining activities—Vygotsky, with his term 'play', focuses on rules. Although the girl plays freely, it is still in the context of rules.

> Whenever there is an imaginary situation in play, there are rules—not rules that are formulated in advance and change during the course of the game, but ones that stem from an imaginary situation. Therefore, the notion that a child can behave in an imaginary situation without rules is simply inaccurate. If the child is playing the role of a mother, then she has rules of maternal behavior. The role the child fulfills, and her relation to the object ... , will always stem from the rules.... [S]he does what she most feels like doing because play is connected with pleasure—and at the same time she learns to follow the line of greatest resistance by subordinating herself to rules ... since subjection to rules and renunciation of impulsive action constitute the path to maximum pleasure in play... [which] continually creates demands on the child to act against immediate impulse... . Thus, the essential attribute of play is a rule ...become a desire (Vygotsky 1978, pp. 95, 99).

As Tomasello in effect later argued, it seems in our nature to escape nature's constraints by inventing our own: rules.
Let us close this brief review of two sorts of cases for the prevalence of rules that are not only 'without words' but without any kind of articulation, showing what rule-guided creatures we naturally are. Regarding rules of make-believe, Vygotsky also noted what Walton would later argue in detail, that while fictions are often quite distinct from facts, this is by no means necessary. After all, what is imagined may be real or true: "it is very easy to have a child play at being a child while the mother is playing the role of mother, that is, playing what is actually true" (Vygotsky 1978, p. 94). Regarding charming examples, Vygotsky cites the English psychologist James Sully's observation (in his 1896 *Studies of Childhood*) that two sisters may say, "Let's play sisters", upon which:

> The child in playing tries to be what she thinks a sister should be. In life the child behaves without thinking she is her sister's sister. In the game of sisters playing 'sisters', however, they are both concerned with displaying their sisterhood; the fact that two sisters decided to play sisters induces both to acquire rules of behavior. Only actions that fit these rules are acceptable to the play situation.

More commonly, however, rules of make-believe correlate quite different things, although with sufficient affordances, such as a doll and a baby, which is a crucial part of the freeing that Vygotsky saw in children's early play, as 'a leading factor in development' (Vygotsky 1978, pp. 101). As for other great apes, so with the very young child, '*things* dictate to the child what he must do: a door demands to be opened and closed ... , [b]ut in play, things lose their determining force. *The child sees one thing but acts...independently of what he sees*' (Vygotsky 1978, pp. 97f). This detachment of meaning, he adds, is a significant freedom:

> The child at [make-believe] play operates with meanings detached from their usual objects and actions; however, a highly interesting contradiction arises in which he uses real actions and real objects. This characteristic is the transitional nature of play; it is a

> stage between the purely situational constraints of early childhood and adult thought, which can be totally free of real situations.[9]

For Vygotsky, such kinds of detachment and transfer form a crucial part of what he called '*mediation*', whereby we free ourselves from the space and time stimulus-proximities of the classical Empiricist, associationist psychology Hume founded. 'Unlike the ape,' Vygotsky remarked, 'which [Wolfgang] Köhler tells us is "the slave of its own visual field," children acquire an independence with respect to their concrete surroundings; they cease to act in the immediately given and evident space' (28), by imposing their own rules in play.

2. Sequence and Simultaneity: The Case of Origami Notation

The 'prop' in the girl's make-believe game was an artifact, a doll, whose *prop*erties guide the rules for the game, the playing of which requires correlations of them with certain features of a baby. As an artifact, with attributes adequate to that function, it had to be produced—made *on* purpose *for* the specific purpose of inciting, but also of determining, states of affairs in the child's make-believe game, which, Walton stresses, includes herself as a central object of imagining. Although, as is well known, without dolls, children can be quite resourceful in pressing objects of many sorts into ad hoc, makeshift use in such games, where rules of consistency apply to the selected features, once chosen. Otherwise there may be imagining, but there is no make-believe game, and certainly not any in which others may join—as is normal even in the sort of game that Ardizonne depicts, where children past the age of three not only assemble with their toys to play side by side but to play together (which clearly does not interest Ardizonne's boy). Developmental psychologists find in such *shared* games the basis of the kind of rule observance that distinguishes human social groups.[10]

Next, directions for making artifacts, including toys, can themselves be taken as rules. This seems especially pertinent in the case of small children, where normativity is a frequent feature of the directive, since children like following simple rules with a sense of right and wrong, and getting things 'right', the right way, before they are sufficiently confident to extemporize on their own. Psychologists also observe that such successful productive processes, guided by a carer, achieve a strong sense of joint attention, in joint action, for joint goals: an essential basis for socialization and thereby—to repeat—a sense of an objective world, of what things are *for* (albeit, as Tomasello states, for *us* or for *them*). In this imitation is again a principal factor, in which verbalizations, besides gestures, hand-guidance, demonstration, play only a part in learning to do things the right way. Peter Hobson observes that it is important that normal human imitation, emulation, tends to take in not only a method for getting to a goal but the manner or 'style' of the action.[11]

Of course a crucial feature of humans is that this guidance can occur through disembodied ('extra-somatic') representations of productive rules. Tomasello has pointed out our species' crucial 'ratchet effect', whereby skills once achieved are passed on and gradually improved.[12] There could be no modern world without an enormous advance in our ability with these capacities for what Tomasello calls "cultural transmission", without direct imitation, by widely dispersing 'representations', which can be understood, stored, annotated, circulated

9 Vygotsky (1978 p. 98), from his last (1933) lecture, 'The Role of Play in Development'. The next quotation is from p.104. Vygotsky's thinking is in the Hegel-Marx tradition of dialectic, which he cites, so thus opposed to the Empiricist stimulus-response thinking of his time.

10 See, for example, Michael Tomasello (2014), Ch. 3, "Joint Intentionality".

11 See Peter Hobson's (2002) experiments, Ch. Eight, "Self and Others".

12 Tomasello, (2014, p. 5).

at multiple remote sites with little effort.[13] Such representations (e.g. wiring diagrams) are of course themselves artifacts, of a higher order, which needed invention, then formalization into international trade rules. In them we find dramatic examples of the limits of words and the advantages of standardized graphics. With them comes another level of rules, rules for making the very notations that guide the prescribed processes: rules for expressing rules to guide action.

Rather than considering this meta-level through complex engineering drawing systems, let us keep to our light-hearted basis in children's games, and consider modern paper folding ('origami') notation, where basic principles are exemplified sufficient to our purposes.[14] Modern notation provides a case study of the emergence of increasingly nonlinguistic rules as we seek precision, through what J.S. Mill called "the method of isolation", whereby not only the ambiguity and vagueness of language, but also its great powers of suggestion are avoided. Beyond that, linguistic barriers between languages—and, considering children, within vocabulary and syntax—can be minimized. To an extent, this may be considered a case of the adage, "show, don't say!". Yet, as just noted, this is 'showing' that crosses the great divide between emulation and that definitively human extra-somatic form of representation generally (and vaguely!) termed 'sign-use'—notably in surface markings.

Yoshizawa's Notation System

It is fitting to exhibit this method through a simple, effective design of a make-believe figure (a nun) by the Japanese origami master Akira Yoshizawa, an engineer, with whom the standard notation is closely identified.[15] I suggest that the reader, with a square of paper, follow its nine folds through our discussion.

As shown in the present instructions, such origami diagrams feature mainly three kinds of lines: solid for edges (partial for crease 'scars', with long dashes for median folds); then for fold directions, short dashed lines denoting 'valley' creases and dash-dot-dot lines 'mountain' folds. (Auxiliary dotted lines may be used for measurement.) In addition, there are three kinds of curved action arrows. Two used here are slightly curved: solid-headed for folding forward, open for folding backward.[16] Added proportional numbers and arrows as shown here, like the sequential numbering of the stages, are not usually necessary. Removing such auxiliary numbers would leave us with a purely graphic set of directional signs, which, with context, may be taken as rules. This is because (although short written instructions are common) people can be counted on to figure things out for themselves, perhaps after some trial and error—which leads us to the next major point about 'pure' graphical rules.

That Japanese signs, including pagination, move from right to left is easily seen. However, getting from step 4 to step 5 might not seem clear, as it excludes a diagram for an intermediate instruction, which in words might be: 'preserving fig. 4's top mountain fold, open model out again as in step 3, make a vertical valley crease through its center, then lie it flat to produce step 5.' However the fact that beginners work such things out by themselves, even without

13 Following Arnold Pacey, I discuss this in Maynard (2010), Ch. 1.

14 Should we desire a philosophical transition from rules of games of make-believe to productive notation, here are a few lines from a pivotal figure in the history of paper folding, Miguel de Unamuno. Recalling childhood games with the traditional Spanish folded pajarita (little bird), he wrote: "When I see myself in my children and, especially, when I start to make for them paper pajaritas of the many kinds whose production I have mastered, I recall my best years. That is because those same pajaritas became the favorite, almost the only, toys for over two years of my early childhood. We made them in legions, invented a country, wrote its history, made dangerous expeditions—in a small holding my family owned in a village near Bilbao. As that did so much to form my mind ..." Unamuno (1902).

15 Along with Samuel and Jean Randlett, and Robert Harbin, although features of it precede them by decades. For a recent effort to trace its history, see Rosenberg (2019).

16 In addition, hollow arrows denote pressing in (sinking) or pulling out, looped denote turning the model over.

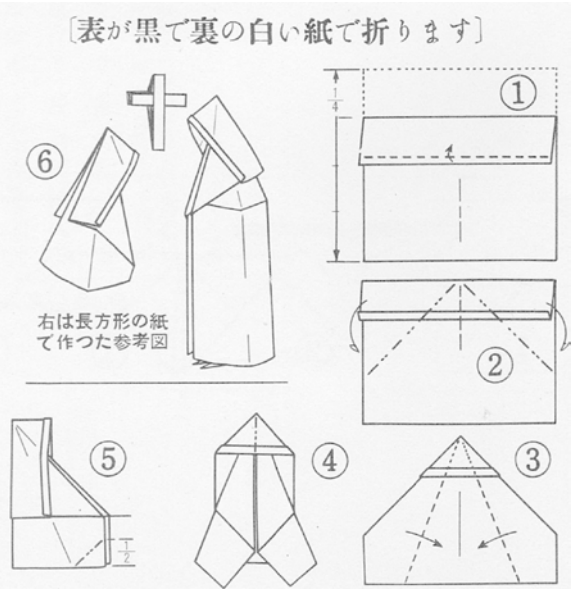

Figure 2

the Japanese, is due to a striking feature of this method of 'signs', which distinguishes it from language: that users can look ahead easily, for example to step 6.
Indeed looking ahead—sometimes several steps, and always to the conclusion—is usual, past the first few steps. Thereby directions as to what to do are supplemented by their reasons, since we see where we are going, and it becomes easier to spot mistakes and to backtrack. Therefore all our figures except the last combine action (directive) and result (descriptive) functions, with action leading the way. For example, step 4 shows us that the valley-fold notation atop step 3 must be taken as applying only to the back layers. Step 5, in turn, shows the importance of the mountain fold in step 4, for what will be the peak of the nun's veil. This is possible because such graphic directives, unlike verbal, have the power of presenting sequences without losing simultaneity, compresence. Indeed as we become practiced, we cluster sequences, skipping groups of figures, towards a familiar result, which may have a familiar name, such as "bird-base".[17] This is striking when we note the inferiority of photographic instructions, more so with contemporary on-line movie origami instructions that show the process of folding. Besides loss of valuable 'isolation' in our notation—in other words, addition of distracting noise—where these reach the least complexity users find themselves having to stop the movie and go back, repeatedly. That is due to the graphic sequence having lost simultaneity. 'Not so fast!' Thus some weaknesses of the direct emulation method: losses of isolation and of simultaneity.

Diagrams and Dimensionalities: Against 'Iconic'

Having stressed 'isolation', what are the properties isolated by Yoshizawa's rule system? Obviously spatial, as geometrical. But they may be characterized, too, in terms of dimensionality. To fold a 3D figure, we fold a 2D object along straight 1D lines, paying close

17 Here is a place to note that origami has developed a non-ordinal notation called 'crease pattern', in which all that is diagrammed is the sheet of paper with the mountain and valley creases on it. Furthermore, as we all know from closing cardboard boxes, 'collapse folding' is used, whereby several folds must be accomplished simultaneously.

attention to 0D points and crossings.[18] In engineers' language, we thereby achieve true proportions, thereby true angles—but not true sizes of lengths or areas. Yet this simple theoretical description needs qualification.

From the first fold, none of the diagrams can be fully 2D; all appeal to 3D perceptions, and in two ways. First, steps 3 and 4 must indicate hidden layers by means of occlusion. For example, lines for the veil's edging-band (under-veil) in fig. 4 imply six of these. Next, steps 1, 2, 5 and 6 also provide important 'oblique' views of under-layers, by means of small 'v', arrow, and 't' junctions of edges. This becomes more complex in step 5, where the diagram slips further toward three-dimensionality, with a slight indication of foreshortening at the open base. Next, two short 'scar' lines on the veil (on study of which we determine that the higher is not on the close side but a 'transparent' view of the corresponding back layer) suggest an oblique image, now not only in layers but already in the dimensional 3D space of step 6's completed models, which feature convergence indications for linear perspective. Thus our little example develops gently through the standard devices of occlusion, foreshortening, diminution.

Now comes the most radical statement in this essay, that, working through even a short, simple set of diagrams like these shows the bootlessness of the common phrase "iconic sign" for characterizing how 'rules without words' function, since blanket terms such as "resemble" and even "stand for" are not only ambiguous but misleading. Objective resemblances there are, notably in the isolated property of true proportions: thus one can transfer angles by tracing them from physical models, also measure proportions for transfer. This is standard engineering drawing.

But what guides us in 'isolating', selectively choosing, features such as line junctions is no isolated objective resemblance or correspondence between figure and physical model but rather a very few, highly selected cues important to mammalian vision. Furthermore, as mentioned, moving picture directions, even when assisted by words, usually fall short of diagrams, despite providing far more 'resemblance'. Thus, besides ambiguity, is revealed the most misleading connotation of 'iconic' and contrasting 'sign' systems, in its underlying 'correspondence' assumption, that the topic is basically of relations between a 'sign' and what it allegedly 'refers to' (which in most engineering also fictional drawing does not exist!). We need better analytic tools for thinking about such matters.

I suggest that such are to be found in another of Lev Vygotsky's conceptions, termed "mediating artifacts", which turns attention to pragmatics, to users of signs, rather than to fancied semantics via 'correspondences'. For Vygotsky, while most artifacts are "externally oriented" to make changes in the environment, signs are "internally oriented" to work on ourselves.[19] Thus, with the origami notation, the printed signs exploit selected (isolated) aspects of our visual systems, notably regarding our extreme sensitivity to edges, along with our species' fine hand-eye coordination, to achieve motor goals.[20] The diagrams therefore mediate the actions of two parts of our brains or neural systems, as visual guides and displays offload short-term memory work as we perform daily tasks. 'Resemblance' and 'iconic' (similarly 'convention') fail to locate the main distinction between rules and directives (mainly) by diagram from those (mainly) by words. Worse, their wide use lulls us into thinking that we understand what we do not. They are blanket terms that smother inquiry.

Rules and Orders of Intentionality

In a final use of our humble example of graphic rules, there is a last large issue to bring out, to prepare for its use in the final section. The result of the folding sequence above is, as we

18 Following Willats (1997), esp. Ch. Three. Since we are dealing with physical objects the latter three dimensionalities are approximate.

19 Vygotsky, "Internalization of Higher Psychological Functions" (1978, p. 55).

20 Vision theorists still dispute the biological basis of edge lines in drawing, and there is a long tradition in art of stating that they do not exist 'in nature': see Maynard (2010, p. 99).

noted, itself an artifact. And although it may be made simply for the sake of making it, it may have the function of a prop for imaging a nun moving forward, which has its own loose rules. Indeed, once completed, we will likely adjust the folds (Yoshizawa suggests softening them) to get the right openness of the imagined figure, which we may then even connect with a specific imaginary game ("And afraid of a disaster Miss Clavel ran fast and faster ...') from Ludwig Bemelmans' children's classic series, *Madeline*. But this is optional.

By contrast, the second level directive rules in the example exemplify something else, a sort of communication between the maker, Yoshizawa, and us. As such it presupposes what I term the five orders of intentionality necessary to *communication*, which is shared by linguistic, graphic and other methods. At the first order, we have our own conscious perception of the markings on the page. At the second, we attribute them to a maker (rather than to accident) who has put them there for a purpose—that of guiding us (order three) to fold a figure. Yet three orders are not enough to capture this communication. Two more are required, which reflect the second and third orders: that we *understand* that the marks were put down to guide us, by our (order four) understanding that they were put there with just this purpose (five).

That is what allows us to follow a given instruction and also to figure some things out ourselves, trusting that the diagram-maker would not skip essential, difficult steps. Thereby we can note when this does happen, and perhaps add our own notations. It also allows us to note and to correct mistakes or ambiguities, such as the tiny one in step 5 where Yoshizawa has not, as elsewhere, left a gap between the figure and the horizontal line marking the top of the '1/2' measure, and also in step 3, where the two dotted lines showing transparency through the veil are not consistent. Generally speaking, this ability, easily to take in such five-order patterns of intentionality, is essential to human communication and thereby to human society. Child development requires attaining some degree of such elaborate 'mentalizing' well before the so-called 'Theory of Mind' of the fourth or fifth years.

In case this last point about communication seems anodyne, let us now consider a very different, more complex case of rules and communication. The great importance of such communication, often without words, may be indicated by leaving the child's world and games for civic road markings, where failure of imaginative powers to put oneself in what Tomasello calls "the mental shoes of some other person", notably to figure things out, not only undermines social cohesion but can be dangerous.

3. Rules of a Road: Signage and Civility

Beginning with our childhood imaginative games, we learn to follow joint rules, which hold for all of 'us', rather than be compelled by force, and to enjoy doing so. That prepares us for later ages when it all becomes more complex. Societies exist only when, and to the degree that, following common rules prevails. I have suggested that such rules involve a five-pattern of intentionality orders, based on the pattern of communication, whereby we are motivated at least partly by recognizing that rules obtain. Of course, societies differ markedly according to the balance of motives: thus the presence of police and other restraints.

Setting out in the first two sections with games of different sorts, as well as crafts, we were able to deal with isolated situations, with a few, friendly participants, done for their own sakes. We noted that such isolation is crucial to what makes them enjoyable and shareable, removed from the challenging complexities of life. As Vygotsky argues, the self-imposed rules make them so. Still, we cannot tell how useful are the analytic tools we developed with such games, in helping us understand the place of signs with rules, without testing them in that complexity. Let us begin such a test with the familiar example of city driving situations, which present well-known complexities.

An everyday example of the places of words or other other 'signs' with rules appears on

communal roads. There, shared knowledge of 'the rules of the road', and where they apply, is necessary for safe and efficient passage, especially in congested areas, where, say, mere eye-contact will not suffice.[21] This makes posted signage necessary, a case study of which may show in what forms themes of our previous discussion emerge again. The city of Chelmsford, Essex, although not very large, stands at a junction of a number of busy highways, carrying much truck traffic. It also features a much-travelled railway line, whose embankment crosses above a city street (Duke), next to its passenger station. All this is approached by road from the south side out of a traffic double-roundabout (see Fig. 3) at the crossings of two roads (Duke and the larger Victoria Road). Duke narrows to pierce the rail embankment through a railroad 'gate', masonry arch (Fig. 5) emerging on the north side at the city's bus station. It is there that our signage challenge begins.

Since a ruling eight years before, automobile traffic that had gone through the gate is no longer permitted. EU and other readers will likely realize that private motorists' knowledge of rules about even entering bus lanes and stops (also exceptions to these laws) is uncertain—so, as before, adherence to the law likely much depends upon our principle of emulating others' actions. More so with less familiar bus gates, where failure to follow the law at that gate in Chelmsford is evidenced by 58,977 penalty charge notices and £1.5 million collected in the first eighteen months after cameras were installed there.[22]

In our terms, this suggests, regarding rules and signs, a breakdown of the five-pattern intentionality of communication, which requires 1) that signs be seen to have been 2) made and located by authorities, for the purpose of getting drivers 3) to follow certain driving rules—based on their understanding that the signs 4) were posted by authorities, in order 5) to get them to comply with those rules at those places. However, according to the civic authorities, many drivers have been flouting rules 4) and 5), thus showing disrespect for law. Many drivers reply that the main failure occurs at orders 2) and 3), involving poor sign design—and for some even at 5), where they believe that—given a fine of £60, 'reduced' to £30 (ca €33, $38) if paid in two weeks—one purpose of the 2), 3) failure is as "a money-spinner" or "cash cow" for the Council.

For the present our topic is limited to orders 2) and 3): sign design and placement, as involving words and graphics. By luck, informed testimony regarding this case comes from one of only a few drivers to win on arbitrated appeal, Dr Bernadine King, a psychology Ph.D. and well-published university researcher in dyslexia. Her argument, notably regarding word signage, provides a concrete test of our analytic tools. I trust it is worth illustrating and citing it at length from news coverage (in five sections), in order to make that test. Looking at Fig. 3, it is important to know that her first destination was the railroad station, through the bus gate. Here are her five arguments, in two groups.

Upstream signage: i) 'Dr King explained that the first sign mentioning the bus gate was along Victoria Road,[23] which is not easy for drivers to understand; drivers don't have enough time to take in all the information on the sign, as a person's eyes would only be able to take in about six or seven words from the sign when driving past: "In addition to two mini roundabouts and roads there's a title in capitals that says 'Duke Street bus gate' on two lines. The number

21 Note how our five-pattern intentionality obtains there: 'I see you and that you see me, and that you see that too, and so we agree.' The Dutch road engineer Hans Mondgren argued influentially against much road signage, citing the sufficiency of such exchanges.

22 See Brown (2019).

23 The Fig. 3 sign is 80 yards from the roundabout at its junction with Duke, .2 miles from the bus depot, illegally through the gate. The shortest legal approach for private vehicles from there would be a loop in the opposite direction, and .9 miles to the depot.

Figure 3

Figure 4

of lines is important, because if it gets beyond two, motorists have a problem taking it all in. Then you have three lines there saying, 'Through traffic avoiding bus gate and low bridge', and what you're drawn to isn't the reading of it. In a busy situation your brain is looking out for important messages, for commands, so you're drawn to the red triangle, which is the height restriction and so to my mind it was, 'oh, there's a height restriction here [but] I'm all right; I'm in a car', and I really didn't take in the rest of it. [Drivers] haven't sufficient room here, where the sign is visible, to take in all the information." She [also] argued that the placement of a road marking and the words "110 yards" below it could easily be interpreted as there being 110 yards between the bridge and the bus gate.[24]

ii) She added that the blue sign identifying the bus gate will "fade into the background as the brain will focus on the red triangle." Another version of the same sign [Fig. 4] is situated on the first mini roundabout, however she said that "it is in a position where drivers not only won't look, and that if a high-sided vehicle were to come past they wouldn't see the sign at all."'

Downstream signage: iii) 'Exiting the second mini roundabout, unaware of the bus gate, it was only then, when she was confronted by the signs at the bridge did [she] realise she was in a restricted area, but found there was no safe way for her to turn around [See Fig. 5]. "I looked up and saw all these signs and then saw the blue sign with the yellow background right on the bridge, saying that I wasn't allowed through there. There are so many signs by the bus gate but a little contradiction in the brain means we cannot absorb all the information. To consciously process all the information, it may take a few seconds and by that point, you've already travelled 20ft or 30ft down the road." Thereby, frustration of the 'figuring it out' principle.

iv) "[Essex County Council] make a big thing about this message that is painted that says bus gate, but you can't read it from here [the junction at the mini roundabout] when you're supposed to be making your decisions [about] what you're doing. It's directly underneath the bridge" [on a downslope, as shown in Fig. 5].

v) "At that point if it's busy, you can't turn around without knocking somebody over and that's why I appealed it, because I felt really strongly that it's an accident waiting to happen. Drivers are being trapped in the area and panicking. The worst thing about this experience—also what everyone has said to me who has been stuck in this situation—is the panic. You just start

24 See Brown (2019). In editing, I have omitted lacuna dots, and substituted 'Dr' for 'Mrs' in references to King.

Figure 5

panicking, 'how do I get out of here', and if you're not an experienced driver you'd be tempted to a quick maneuver to get out of there, which could be a dangerous one and it could end up with an accident."

A first observation is that Vygotsky's principle of 'mediation' seems thwarted by the signage design, since drivers are not able to use their sight and reading capacities adequately to guide their motor (sic) actions, via a quick planning (frontal lobe) task. As Dr King in effect states in i), the bus gate signage, in two upstream locations, is presented as a printed headline, 'bus gate/110 yards' (applying to Duke St, but with no directional arrow at top), divided by a printed clause of seven words (with three qualifications on "traffic") and a directional arrow pointing to Victoria Avenue. The lower portion of this headline is further separated by two colored traffic emblems: blue containing a mix of pictures and text—regarding vehicles permitted, not those banned—red's measurements in metric and English: a mix of words and different kinds of graphics. The linear structure of syntax with words is weak at presenting 'sequence in simultaneity'; however the first sign, on Victoria, 75 m from the two roundabouts, does feature a useful map graphic for that purpose.

In this sort of case, the problem applies as well to the spatial *placement* of the signage, as noted in ii), iii) iv), and here rule application goes wrong in more than one way. Re ii), as Fig. 4 shows, the vertical sign at the junction, placed on the opposite side of the road, is easily occluded, by other signage as well as traffic. More generally, there are real dimensions of time and space. Our rules in previous examples sometimes (notably in the case of origami) were temporal only in the weak sense of *ordinality*, but there was nothing about *interval* (proportional) or *metric* (which includes 'now' and 'then') scales (except in the case of instructional movies). However, as noted in all five objections, intervals of space and time are crucial to such road directions, regarding comfortable perception and reaction times. Although the rules, laws, may not mention them, these are central to the means by which one *applies* the rules.

This will likely become even more evident as driverless vehicles proliferate. We note that, as a perceptual psychologist, Dr King emphasizes the rates at which humans can process and react to visual information—partly because we carry out many simultaneous tasks. Such may not be the parameters of narrowly focused automatic systems, which may be guided by different

systems, with faster response times and more accurate spatial interval and temporal metric sensors. Related to that is another spatial dimensional issue, crucial to road signage: *vertical* versus horizontal presentations. A Council spokesperson replied to the complaint as follows:

> We increased signage at all junctions leading to the bus gate, sent more than 3,000 warning notices and painted the words 'BUS GATE' in five-foot high letters on the road at both entrances to help make drivers aware of the restrictions.... There is no review of signage planned at the bus gate. The signage was reviewed and increased before the enforcement cameras were switched on in 2017.[25]

Yet, as stressed in objection iv), since these physical word inscriptions are horizontal and under the prohibited bridge (see Fig. 5), by the time drivers can read them it is too late to react safely without breaking the law.

A last comment on meanings of this set of arguments for our inquiry into rules in practice, is the psychologist's emphasis on motorists' affective, besides cognitive and conative states: v). Signage itself, whether in words or not, makes *affective* use of designs and their locations, as is clear from even the pointed shapes of caution signs, the use of colors (as mentioned at i)), the size and boldness of markings, along with depictive imagery, exclamation marks and so forth, to carry more than information for human subjects. Besides, there are physical, nonverbal guides and constraints, including road narrowing, bumps, lights, sounds and other devices, termed by designer Donald Norman, 'forcing functions'.[26] The advantage of many of these are Vygotskian: they are artificial environmental states that temporarily call on other parts of ourselves—notably, other perceptual systems—to assist our minds in specific awarenesses. For some of these, working in real (metric) action time, their variations may guide us in modulating our actions, even by feedback structures (consider even speed bumps, which in current terms are 'user interactive'). If, as Norman generally argues, such mistakes are common, users have discovered a *design fault*, which engineers, including information designers, should be eager to know.

Signs, Intentionality, Civility

Let us conclude these three studies with a case for the importance of our overall topic. If, from the perspective of public-sign design, with or without words, we review the concrete cases with which we began, socially meaningful dimensions may come forward. First are communicative 2), 3) design questions of how good and clear, for users, design and location are. Second are the 4), 5) questions present in all our examples: the maker's expressed attitude toward the user, and the reciprocal. That these issues can form a pair shows up with frustratingly unclear—even confusing—improperly located, badly maintained roadsigns, which may further seem to express authority's lack of concern for users.

Perhaps in stressful—including hazardous—situations, this stands out as a common second-order of intentionality failure of the designers and posting authorities—a third-order intentionality failure, through absence of what is termed 'user-based' policies. Added to that are content deficiencies in graphic design generally, including even for consumers on products. There, where users 1) look for guidance in makers' 2) design and presentation of signs in order to guide 3) their actions, the term 'content' may denote more than information or deontic modulation, and have wider meanings regarding *civility*. For at this point of

25 Brown (2019), also: "[Dr] King successfully appealed the fine after the adjudicator decided the signs leading up to the bus gate were unclear to drivers and that the amount of signs around the bridge itself could be distracting."
26 Norman (2013, pp. 144f).

communication, as in any exchange, the 'mentalising' aspect of intentionality includes affective attitudes—not just the cognitive ones so far stressed—with important social and political implications. An essay on the relative 'autism' of many manufacturers with regard to consumers and users would be long indeed. Fortunately, much of it has already been written, with telling examples, by Norman (2013).

Our single example of a council authority's *response* to detailed arguments about public signage, well illustrates more general problems of attitude. As Plato had Socrates remark, makers need to take instructions from users, since products are judged by how they perform in use, and it is the users who know that (*Republic* X, 601d). Yet, Norman argues empirically, at least in our society, with complex artifacts, users tend to blame themselves, not knowing that in many instances their poor performances are shared with many others—who are similarly too embarrassed to reveal them. Not quite so, when they are subject to fines, however. In an earlier work Norman (2013 p 67) argued,

> Eliminate the term *human error*. Instead, talk about communication and interaction: what we call an error is usually bad communication and interaction. When people collaborate with one another, the word error is never used to characterize another... . That's because each person is trying to understand and respond to the other, and when something is not understood or seems inappropriate, it is questioned, clarified, and the collaboration continues.

Whatever the merits of Dr King's arguments, from this point of view it is disappointing to find the Council's all too familiar response of stating what the sign users' position should be, rather than what they are likely to be, and interpreting this narrowly. Having sent out "warning notices" years earlier is not relevant to the case, painting 'bus gate' in "five-foot letters on the road at both entrances to help make drivers aware of the restrictions" does not addresses either why many likely do not become aware or what they are to do if they see them. That most people have poor success folding your simple origami design suggests finding what is lacking in it, not in them.[27] Besides, as Dr King points out, sentience exceeds visual recognition: "Drivers are being trapped in the area and they're panicking". Under stress, more emphatic deontic signage can be counter-effective.

The terms of such civic breakdown might be understood in terms of Tomasello's (non-autistic) child development principle, putting self in "the mental shoes of some other person". What appears lacking in the underpass example is the authority's understanding of motorists' likely points of view, literally, and beyond that. Thus a lack of empathy: imagining how an object might appear, to some, from changing perspectives, optical and otherwise. (There is clear evidence of breakdown of such when the authority refers to the underpass as a "rat run".) The empirical evidence for design failure, including posted graphics and words, seems overwhelming: an average of 110 failures a day in the first year and half of what should be considered a trial of the signage, even when each failure costs a motorist £30. Perhaps red signs showing what single vehicles may *not* pass would be more effective than blue ones (mixing graphics and words) that show those that may.

For such signs, several engineering principles seem clear. First, that whatever the content of the law, sign applications of its rules are inevitably particular, for the senses, and concrete.

27 While writing this piece, there occurred the tragic crash of a Boeing 737, and the response of a U.S. Congressman—"facts in the preliminary report reveal pilot error as a factor...; pilots trained in the US would have successfully been able to control this situation"—proved false

Whether in words or graphics, such signs are artifacts, physical displays, usually visual markings on surfaces, vertical or horizontal, located within wider environments of more or less relevant and irrelevant states and events (which is the meaning of 'concrete': grow together). Next, for such signs, are factors of change, time and motion. Finally, that the agents that these artifacts are *for* are people, with some range of mental abilities and, importantly, intentions and attitudes. Of course, the implication of all this is that makers, authorities, and users should cooperate to improve *communication* via such signs, rather than assume adversarial positions.

Finally, we may remark on how design failures—especially at authority levels—of the sorts noted become failures for us all. Perceived disregard, even disrespect, for oneself is understood as the same for all, "us". With this comes a *collective* sense, regarding the maker's or the authority's attitude to us, not just to self. To put the point in a positive manner, when, as often, government sign-design seems user-based (for 'us'), respectful, clear, intelligent, even pleasant to use—and well integrated with its environment—our sense of *collectivity* is strengthened, and government, perceived as concerned with that, seems present in a good way.

As the social scientist Tony Judt often stressed in just such contexts, we are thereby encouraged to be diversities that, with government's help, cooperate to form collectivities, with what he termed "institutions and relations of ... cohesion, trust, custom, restraint, obligation, morality, authority" in their best senses.[28]

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28 Judt (2016, p. 313).

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JAKOB KREBS
Institute for Philosophy, Goethe-University Frankfurt
j.krebs@em.uni-frankfurt.de

PROMISING PICTURES: DEPICTING, ADVERTISING, INSTRUCTING

abstract

Depictive pictures may be promising in at least three different senses, which are examined in this essay. The first concerns genuine acts of promising that involve pictorial representations, like gift cards displaying a present the promisor commits herself to give. In a second sense, advertising strategists use pictures to promise to consumers perfect pasta or empty beaches. A third sense amounts to pictures as promising if they are instructive. Such pictures can be used to learn some type of action, like the performance of a military salute or the crafting of some artifact. All three promissory uses of pictures exhibit normative forces related to commitments and entitlements regarding justified expectations.

keywords

deontic artifacts, directive pictures, graphic rules, pictorial instruction, visual aids

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1. Visual Aids

Examples for promising pictures range from individualized graphic gift vouchers over children's drawn treasure maps up to visualized advertising promises, election pledges and all sorts of pictorial instructions. Depictive pictures may be promising in at least three different senses, which are accounted for in this essay. All three senses of promising pictures reveal normative issues related to commitments and justified expectations. The first sense concerns pictorial representations that are used – solely or in combination with speech acts – in genuine acts of promising, like gift vouchers showing a present the promisor commits herself to. In a second, derivative sense, pictures regularly get used by advertising strategists to promise endless empty beaches or tasty dog food. In a third and more metaphorical perspective, pictures count as promising, if they are instructive and used to promote practical goals, as in guides on how to perform a correct hand salute or in any handicraft instruction. The following inquiry into salient normative aspects in the promissory use of pictures unfolds in three sections. The first argues that it is possible to give a promise in the strict sense with a picture in combination with or even instead of a speech act. Section two asks whether depictive advertising promises are promises at all and consults the related legal debate about contracts as mutual promises. Section three argues that promising instructive pictures are promises merely metaphorically, while it uncovers several related normative regards. Promising pictorial instructions may feature as graphic rules, involving standards of correctness, involving expectations and commitments, or entitlements and duties respectively.

To be sure, pictorial representations are used in many kinds of communicative interactions – some aesthetic, some epistemic, some normative, and sometimes all three intertwined. In general, pictures can depict things, because they can show how states of affairs look – "in ordinary respects such as color and shape" (Blumson, 2014, 152) and due to a "distinct sensory phenomenology" (Boghossian, 2015, p. 205). As such, "pictures afford visual access [...] to the world in a visual style, using visual skills" (Noë, 2012, p. 96), whether they represent existing particulars and situations, or fictional states of affairs, or even bodily practices and the making of artifacts. When used in communicative interactions (Schirra & Sachs-Hombach, 2007), diverse types of pictorial acts can be specified by analogues of illocutionary forces. For example, a straight forward analogue to assertoric force motivates the use of photographs as evidence (Cohen & Meskin, 2008), which is surely not their only utilization. Since the evidential usage draws on the pictorial representation of facts, and aims at their communication, the presentation of a photographic proof amounts to a constative act.

In contrast, instructional uses of pictures appear to be directive acts (Lopes, 2004). Put in

other words, prescriptive pictures can give reasons for normatively guided action, whereas descriptive pictures give reasons to belief (Kissine, 2013). The upshot of this paper is an account of the additional type of commissive uses of pictures.

2. Pictorial Promises

A drawn treasure map might appear descriptive at first sight, since it shows the whereabouts of hidden valuables. But in addition to their descriptive character, treasure maps give rise to legitimate expectations and they establish simple graphic rules. In displaying a course or a location, they suggest a standard of correctness and therefore, they appear directive. But apart from that, a treasure map that fails the expectations has the character of an empty promise. In this regard, misguiding maps are not just objectively inaccurate, or pragmatically useless, but normatively objectionable, too. A more obvious example of promising pictures is the individually fashioned graphic gift voucher. Such certificates might appear to be merely descriptive, constative or informative, but as all artifacts they "have as proper functions the purposes for which they were designed" (Millikan, 2005, p. 158). Gift vouchers are designed to entitle the recipient to claim the promised, where the donor is typically responsible for the provision of the depicted. As such, the delivered voucher serves as a deontic artifact. It affords visual satisfaction conditions, which characterize the content of an obligation. Given a certain degree of individuality and complexity of the promised item, one would hardly consider a linguistic description of the gift reasonable. In this respect, it is possible to promise a child a stuffed toy, modeled by a custom plush service with regard to a self-made imaginative drawing. Since words are not needed and might not suffice to describe the promised toy, it is the picture alone that allows one to assess whether the promise was kept.

Promise fulfilled from: Custom Plush Service - www.budsies.com

In this sense, if we allow for *constative* and *directive* pictorial acts in analogy to speech acts (Bach & Harnish, 1997), we can determine *commissive* uses as well. When pictures are used to make a promise, their function should differ from the *epistemic* functions of *descriptive* pictures and the *deontic* functions of *directive* pictures. In comparison, promising pictures expose a *commissive* dimension of visually specified voluntary obligations. Thus, pictorial promises can visually characterize the obligations toward the recipient, where the visualized state of affairs is the obligation's content. Either you provide the toy depicted on the gift voucher or you broke the promise, like you do, when the marked location on your treasure map does not hold any valuables. This unveils a normative constraint on top of an epistemological function. In epistemological regards, promises *inform* about the promisor's intentions (Shockley, 2008), and promises given with the help of pictures do so with respect to visually individuated mental states. In contrast, in normative regards, when promises are specified with the help of pictures, the promisor is obliged to provide the depicted, while the promisee is entitled to expect it. If someone expresses a strong desire for the fancy pair of socks depicted in a catalogue, and you happen to promise to provide them, the picture will set the standard for the obligation – and the expectation, respectively. These normative attitudes are firmly grounded in the social practice of giving and keeping promises, as well as the communication of related behavioral commitments like threats, refusals or pledges. Although the use of

promising pictures might appear parasitic on commissive *speech* acts, the commissive use of pictures sometimes suffices without further verbal elaboration. Although some argue that a verbal description would always be possible *in principle*, pictures more than often surpass verbal means in terms of comprehensibility, accessibility and immediacy.
The case for promises determined by pictorial means translates well into other sense modalities. If a mechanic promises to tweak your motor bike in accord with the sample of a certain roaring sound, the auditory exemplification provides the satisfaction conditions for the content of the promise. Although this commissive use of samples might be often accompanied by corresponding speech acts – like saying 'I promise you *this* sound', while providing a sample – it is the sample that specifies the promise. This point should expand to all kinds of exemplifying samples or "not just pictures, but the broad class of images" (Kulvicki, 2014, p. 92.) in a structural sense: One can give promises with respect to a sample of odors, to a tasty piece of cake, to the texture of some fabric, or to the style of a wedding's decoration. The latter example points beyond the area of interpersonal promises to that of advertising promises. Among these are pictorially given promises, concerned about the looks, the types, the uses or the users of sales goods and services. If the wedding decoration does not match the one chosen in virtue of a picture in the wedding planner's catalogue, then the advertising promise got broken.

3. Pictures in Advertising Promises

Pictures on packaging supposedly *inform* about what is in the package by showing how the things inside (should) look. But these practices are not always straight forward, or, at least, they can correspond to incongruent conventions. For example, depictive labeling of baby food often shows a salient ingredient, like cartoonish figures of unreasonably happy lambs. On the contrary, the labeling of animal food rarely shows the ingredients, but depictions of the target group, like satisfied cats, dogs, or fish. So, one might find the same depicted fish on baby food and on fish food, while in the latter case the processed and the consuming species might be the same. Moreover, the same depiction of a fish can label reef-friendly sun lotion without chemicals. It then features as a symbolic or metonymic mark for the spared coral reefs. In this regard, our practices of pictorial communication can turn out rather complicated and contradictory at times – mirroring the many different ways we use words or sentences. These complexities highlight the need for educated "visual, media, and multiliteracies" (Serafini, 2014, p. 28) and "critical pictorial literacies" (Krebs 2015, p. 23) especially, which allow to understand the communicative – or manipulative – function of a depiction in a given context. While the labeling of packages by means of illustration might appear descriptive at first, it is not an epistemic tool in the strict sense of a photographic proof (Abell, 2010). Even the photo of spinach on a tinned can hardly grants the exact looks of the pulp inside. Nevertheless, the depictive labeling entitles expectations by default toward the appearances or at least type of the packed. These expectations correspond to the producer's responsibilities, which are expressed by the intentional illustrations. Certainly, that counts for depictive labelling in the first place, while even the use of photos in advertisements can be excused as merely symbolic, associative, or metaphoric. In this regard, the widespread and discreet disclaimers on many packages, reading 'serving suggestion' or similar, illustrate the vital point: By default, consumers are entitled to expect the appearance or at least the substance of the depicted, and producers must explicitly block that expectation, when using the picture misleadingly. Not only does a stark mismatch between picture and depicted may entitle to return the product, but deceptive pictures can damage the brand's image or even yield an inconvenient court decision. The latter clearly touches on a normative dimension in the advertising with pictures. When the European Court of Justice judged the label of a tea packaging to be *pictorially* misleading, the judgment emphasized that 'labeling' is not restricted to linguistic means

but also comprises a "pictorial matter or symbol relating to a foodstuff" (European Court of Justice, 2015). Consequently, the regulation precludes the misleading labeling of a foodstuff, "giving the impression, by means of the appearance, description or pictorial representation of a particular ingredient" (European Court of Justice, 2015) when that ingredient is not present in the product. Accordingly, since pictures on packaging specify certain obligations towards the customer, an illustrated package appears to be a deontic artifact, featuring in a practice of legal obligations. As such, it serves the function of expressing some commitments of a promisor and the function to entitle expectations on behalf of a promisee. Manifestly, regular cases of broken pictorial promises concern more or less idealized illustrations, in which shapes, shades, colors, or scalar relations markedly deviate from the actual product. Following a widespread view on promises, the promising pictorial expression *informs* the promisee about what to expect and thereby serves normatively relevant *interests in information*. But, as Owens and others have argued, while "obligations surrounding the transmission of information" (Owen, 2006, p. 54) are important in many respects, they may not be sufficient to raise genuine commissive obligations. His theoretical adjustment in terms of *authority interests* is supported by Heuer as a „content-independent reason for keeping promises" (Heuer, 2012, p. 849). At least it appears to be necessary that the content of an obligation should be accessible to promisor and promisee – be it in linguistic, pictorial or any other media. This seems especially plausible for the case of pictorial advertising, deceived consumers, and illegitimate purchase contracts. Still, even the "standard textbook fare that a contract is a promise (or an exchange of promises) that the law will enforce" (Pratt, 2007, p. 1) is not unchallenged, since the commissive features of the contract might not rely on any intentionally communicated voluntary moral obligation (Pratt, 2014, p. 397). This provision would preclude advertising promises as parts of contracts (Barnett, 2014). But, if an alternative model of contractual obligations replaces the promissory model, this can still draw on pictorial specifications of the obligation in legally binding pictures, like architect's plans and other constructional drawings with legal relevance. Regarding sketchy plans, which can serve as graphic rules for all kinds of constructions, the third – instructive – type of promising pictures needs further attention.

4. Promising Pictorial Instructions

Apart from pictorially specified acts of promising and the derivative advertising promises, we commonly value pictorial instructions as promising. Although this is a metaphorical borrowing from genuine, interpersonal promises, certain types of directive pictures might still resemble rather commissive than directive acts. While some pictures are used to instruct in an *imperative* sense, pictorial instructions do not necessarily oblige one to act in a certain way. On the contrary, all kinds of "visual aids" (Arnheim, 1969, p. 308) raise *legitimate expectations* with respect to the visualized capabilities or the making of some artifact. This is because next to archival, participatory, and displaying functions, (Lehmann, 2012, p. 13) pictorial instructions in the first place serve an "instructional function, in that they enable the acquisition of skills and material knowledge" (Lehmann, 2012, p. 9).
For example, one finds sequences of pictures at the doctor's or in hospitals showing how to wash one's hands properly. In medical contexts, the pictorial sequence is used to set a standard and to provide a graphic rule, insofar as the pictures "can capture the complexity and simultaneity of making where words fail to do so." (Lehmann, 2012, p. 12) Used in this fashion, pictures can instantiate an elaborated type of a pushmi-pullyu representation. This term coined by Millikan (1995) denotes representations that are at the same time descriptive and prescriptive. In this sense, a pictorial instruction represents a state of affairs on the one hand, while on the other "it has the function of guiding action." (Lopes, 2004, p. 189) In the hospital, the hand washing instruction shows the procedure the medical staff accords to,

and it shows how one should behave in order to meet that standard. Put up in a public place, your office, or at home, the instructive pictures might not have this strong normative force – depending on your household regime.

Detail from: https://commons.wikimedia.org/wiki/File:Hand_washing_instructions_sign.jpg

The depicted cleaning of hands is not necessarily obligatory in a strong sense, since in many cases it is completely up to the interpreter, whether and how she wants to perform. This calls for a differentiation between two cases, which appear to be the extremes of a continuum of pictorial instructions and rules in general. In the hospital case, the pictorial hand washing instruction expresses and enforces a rule graphically. It is followed in order to comply with a standard of correctness, and, in effect, to avoid sanctions. Put up at home, it may merely feature as a reminder of how to clean one's hands according to medical standards. Here people can decide from case to case, if the full procedure is necessary at all – whether one is up to treat a wound, or to sterilize some jars for jam. In terms of the pushmi-pullyu representation, the pictorial instruction is promising in two related, but different senses. Firstly, it displays how hands *are* cleaned in accord with a medical standard, regardless of whether one wants to meet this standard. Secondly, it displays how one *should* wash one's hands in order to meet the standard, whether one wants to meet that standard because of some normative consequences or just because of some practical needs.

Gombrich starts his study of instructional pictures with pictorial emergency leaflets from airplanes, which amount to "cases in which it may be a matter of life and death whether an image is correctly understood" (Gombrich, 1990, p. 26). But even the airplane leaflet can count as 'imperative' merely in the conditional sense – for those who happen to entertain the wish to survive. Further examples in Gombrich are instructions to 'erect a tipped caravan with a self made pulley', 'miscellaneous fancy needlework' and 'over 15 ways to fold a napkin' (Gombrich, 1990). None of these instructional uses appears to impose obligations on the addressee, as an imperative or a directive act would supposedly do. On the contrary, the educator assumes responsibility toward the learner in providing suitable pictorial means (Lehmann, 2012). In this regard, educational instructions are "not the same as merely issuing an imperative, a command to act" (Lopes, 2004, p. 191), but they entitle expectations by holding out the prospect of the depicted capacities – resembling the character of commissive acts. The directive difference between *imperative* pictures and *educational* ones can be traced down to the effective differences in use. A pictorial instruction that shows the crafting of some random artifact – like a cupboard, a pullover, or a cardboard figurine – is hardly imperative. In contrast, the instruction in a hospital, showing how to properly wash your hands, amounts to an imperative for the staff, as do pictorial instructions on how to correctly perform a certain type of a pirouette, a prayer, a salute, or other institutional requirements.

For example, a salute is a regulated and "required act of military courtesy" (Naval Education and Training, 2002, p. 9-2) in the sense that soldiers are not to "resent or try to avoid saluting persons entitled to receive the salute." (Naval Education and Training, 2002, p. 9-2) That is why the depiction of a correct salute in a military manual is not just a picture of a random

bodily posture, but it is an *imperative* instruction, which determines pictorially whether some posture passes as a correct salute. As such, the depiction of a salute in a military manual is intended as a graphic rule, which visually regulates the obligatory form of a military practice. The depiction of the crafting of a cardboard figurine usually is not to be understood as such an imperative graphic rule – although one could imagine contexts where it does. Contrasting with the salute, such crafting instructions just show *one possible* method to assemble, say, a dog figure from pieces of cardboard. Neither is it intended to *effectuate* anybody to agglutinate the shown figure, nor does it intend to *prescribe* a certain obligatory sequence. While both types of instructions promise to provide visual access to a certain performance, they do so in apparently different normative modes. While any rule leaves room for interpretation, the former visualizes a standard for correctness, while the latter merely presents a feasible possibility.

Considering educational pictorial instructions, the pictorially articulated intention to explain is fulfilled when the depicted capability is executed or understood. In this perspective, pictorial instructions entitle to expect the acquisition of a capability, *because* they are intended to guide and structure someone's actions. Depending on how strict one reads the clause of the directing, one might either classify educational pictorial instructions as purely commissive and exclude them from the realm of the directive pictures or concede a sub-type of the latter. That's because the educational use of pictures does not oblige the addressee to do anything, while such pictures impose obligations on the educator, who owes effective educational depictions to the seekers of practical knowledge. In this sense, the educator's promise amounts to the selection of decisive phases of an action, while leaving out less relevant procedural sections, exploiting "the double nature of the image which shows, but also hides." (Lehmann, 2012, p. 15) In contrast to the purely educational use, the depicted salute in the military manual does not just promise visual access to a formal way to greet, but it obliges troop members to perform the greeting in the depicted fashion. This is a normatively richer case than the simple directive picture, like the one depicting a helmet and thereby obliging all trespassers to wear one.

Conclusion

To conclude, this essay covered three types of promising pictures or, more precisely, three paradigmatic uses of pictures with a promissory character. There may be more and there should be hybrid cases, too. The first type is the genuinely promising picture, which is used to give a promise with the help of depictive means in the context of personal relations. In this sense, a picture can be used to communicate the satisfaction conditions of the promise's content. The picture gives visual access to a mental content that is about a state of affairs. This state is the one the promisor commits herself to bring about and the one the promisee is legitimately entitled to expect.

A second – markedly dubious – type of promising pictures amounts to their use in advertising. There might be no individual's act of a promise, but, nevertheless, this type of use exhibits the same promissory characteristic with regard to commitments and entitlements. Ideally, the picture depicts the appearance of what is offered for sale. However, if the depiction differs from the appearance of the product, legitimate expectations are violated, and a buyer should have a right to withdraw from the purchase. In reality, it's often more complicated. Because pictures are regularly used to tempt consumers to buy all kinds of stuff (more than often exploiting their tendency to buy things they don't need in order to impress people they don't like). At the same time, written disclaimers are used to undermine the default practice of 'what you see is what you get'. Thus, expectations are raised by the picture on the one hand and delegitimized by an overriding communicative act on the other. Moreover, there is no homogeneous practice of commercial depiction. Instead, we live by

many parallel and sometimes contradictory uses of advertising pictures. Sometimes, they show actual or idealized appearances of a content, sometimes some of the ingredients before procession, sometimes exemplary uses of the goods, sometimes the addressees of the product, and sometimes appearances that merely symbolize one of the before mentioned. This entanglement of depictive uses, commitments and entitlements can lead to conflicting conceptions and even legal disputes.

In a third, and more or less metaphorical sense, pictures can be promising if they are meant to instruct. Here, the promissive dimension might appear overstretched or at least twisted, but pictorial instructions exhibit an analogue structure of complementary commitments and entitlements. An instructive picture can be promising, because it meets legitimate expectations with regard to the learning of some type of action. The action can be performed with regard to the pictorial instruction, and this is what the producer of the picture commits herself to. In this respect, the purely instructive or educational use of pictures contrasts with their directive or imperative use. Purely instructive uses of pictures provide a graphic rule for the performance of a type of action, without amounting to an obligation to act in the manner depicted. In contrast, the directive use of pictures aims at the enforcement of a rule with graphic means. Genuine pictorial imperatives do not commit their producer to anything, but they oblige the addressee to behave as shown. The obligation to wear a helmet, for example, can be communicated as a duty with pictorial means.

To be sure, there can be mixed cases of the above idealized types. For example, if the advertising promise can be traced back to an individual vendor, or if a picture is used to educate and to direct at the same time. Since no illocutionary force indicator can be depicted, the practice of pictorial promising might ultimately depend on rich social language games. But pictures can play a vital role with respect to the appearances of the promised, be it interpersonal commitments, pictorial consumer information, or actions and their results: Pictorial specifications of intentions, contents, actions, obligations, and entitlements can provide access to states of affairs in visual respects. Unsurprisingly, if we want to communicate some actual or future state with regard to its visual appearance, we regularly favor pictorial representations over verbal ones. When we use pictures to promise, we communicate a visually characterized possible state of affairs together with our commitment to its realization. All the above cases illustrate firstly, how the communicative use of pictures can substitute or surpass verbal means, especially if the content of the communication is the visual appearance. Secondly, all three types show how some communicative uses of pictures are permeated by or embedded in wider normative practices of mutual commitments and entitlements. Thirdly, and this requires further research, all three cases refer to the relevance of pictorial representations for certain types of actions – be it in planning, selecting, or learning.

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LUIGI COMINELLI
Università degli Studi di Milano
luigi.cominelli@unimi.it

"ROAD RULES": ANALYZING TRAFFIC SIGNS THROUGH A SOCIO-COGNITIVE APPROACH

abstract

Around 1.3 million people die every year because of road traffic crashes. Although safety rules, vehicle standards and post-accident health care, have all seen significant improvement, rising population and quick motorization rates have added to the casualty numbers. Road safety has been included among the Sustainable Development Goals, but the target set of halving the number of road deaths by 2020 will be missed. With the emergent attention to road safety, several approaches may be adopted. One is tightening penalties to induce more prudent behavior. The second is to improve protection devices and vehicles. The third is to adapt road designs, including roadside signs, to modern roads and vehicles and to human behavior. This last approach in particular is the one where I think that substantial improvements may still be achieved. One of the most interesting aspects in terms of impact and effectiveness of rules, may be understood by focusing on the cognition process of the rule that is incorporated into a road sign, and by how this cognition can be framed so that voluntary compliance is enhanced. Road signs have always made extensive use of explanatory images. But it is also the unconscious social pressure that one's driving behavior is being watched that produces compliance. A normative-semiotic perspective should be integrated by a cognitive perspective, so that insights from both the natural and the social sciences may achieve higher degrees of precision and predictability.

keywords

road sign, behavior

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1. Introduction

In this article I will consider the non-linguistic rules represented by road signs that regulate the circulation of vehicles and pedestrians on public roads. In the first place I will try to delimit the field, and define the kinds of norms present in road signs. Secondly, I will try to understand how traffic signals influence human behavior, based on socio-psychological research and some recent neurocognitive discoveries. Thirdly, I will hazard some predictions, based also on ongoing research, with respect to what may be the directives of change for road safety and traffic organization.

The approach I intend to adopt is a socio-cognitive one. Although choices and decisions taken by a driver can be considered as eminently individual, and mainly influenced by biological-genetic cognitive factors (attention span, visual acuity, submissiveness and tendency to obedience, impulsiveness and aggressiveness), the way in which these attitudes are expressed is undoubtedly influenced by the social context and by what is derived from it (tendency to conformism, weight attributed to reputation, knowledge and respect for social norms). These factors in turn feed-back into the fundamental structures that determine our basic individual behaviors.

Because the dynamic underlying the law is also bio-social (Cominelli 2018), one of the approaches that does not risk neglecting any of these fundamental factors is therefore that which considers these types of norms as functioning in an ecological bio-social context.

2. Road safety

According to a World Health Organization report (WHO, 2018), around 1.3 million people die every year because of road traffic crashes. This means that around 3.700 people, or around one person every 23 seconds, dies for causes related to transit. Many more (in the number of tens of millions) are injured or permanently disabled. These figures have increased on a global scale in recent years. In relative terms, road risk is decreasing in developed countries but it's increasing exponentially in developing countries, where it is three times as high. Between 2013 and 2016, road deaths slightly diminished in 48 middle and high income countries, while they went up in 104 countries, most of them in the low-income group. Although levels of safety rules, higher vehicle standards and post-accident health care, have all seen significant improvement, rising population and quick motorization rates have added to the casualty numbers (WHO 2018). Road safety has been included among the Sustainable Development Goals, but the target set of halving the number of road deaths by 2020 will most certainly be missed (Target 3.6 of the SDG). Road design and safety measures for cyclists and pedestrians in particular represent the hardest hurdle for developing countries, while the increasingly better

quality of pavements has allowed cars and trucks to increase their speed, which was earlier limited by the poor conditions of roads.
Leaving aside the fortuitous cases, and those cases where a defective vehicle or road infrastructure is to blame, accidents happen because of negligence and violation of the rules of circulation. Most harmful events are related to these violations, and may be directly attributed to speeding, drunk driving, or lack in the use of restraining or safety measures such as helmets, safety belts and child seats. The Dutch Institute for Road Safety Research estimated that just respecting the speed limit would decrease the number of casualties by 25-30% (Wegman *et al.*, 2007). The inability to recognize road hazards has been considered as contributing to around 25-50% of accidents (Charlton, 2006, p. 496).
Despite the fact that road traffic crashes are now the eighth leading cause of death at the global level (and the first cause of death for people aged between 5 and 29 years), the diluted nature of such accidents lowers the perception of this risk in the public eye, and makes infractions to road safety rules as a minor offence in common perception. While shooting a gun recklessly in the middle of the street bears serious consequences for the shooter, speeding your car in a city is not normally frowned upon that much. Up until some years ago, even if road safety had been an issue in the public debate for more than a century (McMurtry, 1915), the social disvalue of reckless driving and negligent behavior behind the wheel was underestimated. The situation is now changing, due to the perception of human life and health as something sacred, but only when serious harm happens, that same negligent behavior takes on a higher social disvalue. For their weight and speed, motor vehicles can be considered a weapon to handle with particular care, and this chance is reflected in the fact that vehicular "homicide", in the form of "vehicular manslaughter", has begun to appear in several jurisdictions, where it now stands between voluntary murder and manslaughter (Dahl, 2004; Massaro, 2016).
As difficult as it may seem, some have attempted to measure the material and immaterial costs of road accidents. In the Netherlands, one of the countries in the world with the safest roads, it was calculated that society at large bore a staggering cost of 12,3 billion of Euros, amounting to 2,6% of the Gross National Product (Wegman *et al.*, 2007, 324).
With the emergent attention to road safety, several approaches may be adopted. One is tightening penalties to induce more prudent behavior. The second is to improve protection devices, forcing drivers and passengers to wear helmets or safety belts, to subject vehicles to periodic checks, to forbid the consumption of alcohol or other psychotropic substances even in moderate quantities before driving, and to prohibit any tool that may distract drivers. The third is to adapt road designs, including roadside signs, to modern roads and vehicles. This last approach in particular is the one where I think that substantial improvements may still be achieved, especially if policy changes will incorporate the insights of sociology and cognitive science on how individual and social behavior intersect.

3. What are road signs?

Road signs convey norms of circulation. Road signs are expressed in a symbolical language, that through the conventional combination of pictures, writing, color and shapes, communicate rules. It is different from verbalized language, at least in length, as it cannot use the most complex syntactic constructions, because it needs to be seen and understood in most cases in a short time span. Different expressions have been used for this kind of normativity, such as "graphic rules" (Moroni & Lorini, 2017) or "pictorial law" (Boehme-Neßler, 2010). Some put the origin of this law of images in the *ius imaginum* of the ancient Rome, where heraldic arms and the hierarchy or precedence in military, social and ecclesiastical affairs was visualized in banners, coats, liveries, short inscriptions or insignia (Goodrich, 2014, p. 3). Colors, figures and combinations were also a part of it. It all indicated foremost the difference

between what was familiar and friendly, and what was instead hostile and foreign (Goodrich, 2014, pp. 4-5).

During a subsequent phase, and with the process of rationalization of the law (Weber, 1995), legal systems have increasingly become skeptical of "regulation through images". Formalized and analytical language seemed to be at this point the best way to orient and control social behavior (Boehme-Neßler, 2010, p. 90, p. 101). During this historical time, eliciting behavior by vivid and salient images started to be in contradiction with the Cartesian rationality of human legal action. Pictures and images in a rational discourse could be considered at best decorative and primitive. According to the legal common sense, pictorial law had to be the exception, save for some limited cases (urban planning, zoning, patent and brand ownership), and it had to be avoided as intrinsically subjective, if not "linked with sensuality, sin, emotions and irrationality" (Boehme-Neßler, 2010, p. 107). Visual signs, and foremost road signs, must then be clearly regulated in details through technical annexes that define the minutiae and specifications that pictures need to respect in order to be considered binding.

And yet, due to their immediate salience, pictures are being rediscovered as a means to convey normative messages. The legal world is taking notice: graphic illustrations are still quite rare in legal briefs and court judgements, but these habits are changing, as time constraints are turning communication into something less verbal and more visual [1].

Images have a potential impact which cannot be ignored. Visual representations are harder to challenge than verbalized concepts. An image can be complex, and its contradiction "dissipates without having any effect, because it can only ever deal with a small, limited aspect of the image at a time" (Boehme-Neßler, 2010, p. 130). In a way, pictures are better at controlling human behavior imperatively. The efficacy of visual norms has a biological-anthropological explanation that will be later illustrated (see par. 4). Furthermore, the law is increasingly personalized (Cominelli, 2018, p. 182), and this revival of pictorial law could be at the same time a cause and a consequence of appealing to individual sensitivities (Boehme-Neßler, 2010, p. 134).

Semiotic studies have tried to overcome the lingering distrust by arguing that pictorial law has the same linguistic value as verbalized law. Studincki, for example, draws the distinction between normative road signs (the speed limit) and descriptive road signs (eg: the danger sign of a slippery road, or of wandering animals), and by doing this he implicitly seems to maintain that road signs are proper normative messages because they are a proper language themselves (Studnicki, 1970).

More recently, Dudek (2018) criticizes the decisions by the Polish Constitutional Tribunal and by the Polish Supreme Court on some aspects of the basic traffic sign categories in Poland (obligatory, prohibitory, informative and warning) moving from the perspective of semiotic theory. The case in point is a traffic sign informing of the need to pay a fee for a parking space. The judges argued that non-normative signs (informative and warning signs) were non-separable from their normative basis. In another work, Dudek maintains that traffic signals, both as signs and realizations, are an integral part of the legal norms that are encoded in such provisions, and not a secondary part of them (Dudek, 2015, p. 366).

And yet, it's clear that even an informative sign, and above all a warning sign, can have a fully normative content, in the sense that they raise the minimum mandatory standard of diligence,

1 In 2012, an amicus curiae brief submitted in an antitrust case to contest a settlement proposal by the Department of Justice, was drafted as a comic strip to comply with a length limit of 5 pages set by a US District Court Debra Cassens Weiss, *Faced with a Five-Page Limit, Lawyer Files Cartoon Amicus Brief with Proper Font Size*. Retrieved April 9, 2019, from the American Bar Association Journal website, http://www.abajournal.com/news/article/faced_with_a_five-page_limit_lawyer_files_cartoon_amicus_brief_with_proper_/

which couldn't have been predetermined without the knowledge of the road conditions. The depiction of a harmful event or dangerous situation, therefore calls for a greater level of attention and a higher standard of diligence, in the absence of which liability could be incurred.

I think however that a purely semiotic approach misses the mark, and I concur with those who have denounced the "verbal-centrism" that in general dominates the analysis of communicative interaction, and of legal interactions in particular (Moroni & Lorini, 2017, p. 319). Law operates through images, it is incorporated in images, and these images do not just represent the description of facts that are relevant for the law. These graphic rules "[do not] merely evoke or defer to other word-made regulations: graphic rules directly state prescriptions and influence possible behavior"; in traffic signs, "[f]or all practical purposes the arrow [sign] is the law" (Moroni & Lorini, 2017, p. 321).

The problem that the sign may or may not be a reliable instrument for describing reality is a non-issue in social regulation. The debate between iconism and anti-iconisms in modern semiotics, discussing whether images and symbols, in particular, really incorporate at least partly what is being depicted, is in fact almost reminiscent of the debate between naturalism/behaviorism and constructionism in the social sciences. Pictorial systems, just like sentential systems, make use of recurrent parts following systematic rules of combination (Camp, 2007; Westerhoff, 2005). Apories between pictorial rules are also possible, notwithstanding the debate on its linguistic nature, and it looks simply illogical to resolve the issue by downgrading graphic rules, as recently the Italian administrative courts seemed to do[2], by stating that in case of contradictions, the written rule will prevail over the graphic rule (Moroni & Lorini, 2017, p. 327). Just as verbal language, pictorial signs may be interpreted and misunderstood, as recent research shows with regard to increased fatality risks for international tourists in the countries of destination (Choocharukul & Sriroongvikrai, 2017, p. 4521).

I also take issue with an explicitly semiotic perspective (Pusceddu, 2017) that might reduce the normativity of signs to a problem of language. If according to semiotics, only a communication system with a discernible syntax may be linguistic (Pusceddu, 2017, p. 451), and such variable in some way in fact affects its normativity, I reply that then law is probably not (always) a communicative act.

Cognitive processes in fact do not need words, nor the thought of words, either verbal or written, just like they do not need images. And as Lorini and Moroni remind us, it is for this reason that the comprehensibility of the verbal language vs. the pictorial language should not be a defining issue (Moroni & Lorini, 2017, pp. 330-331). Evolutionary psychology and cognitive ethology have proved that pre-verbal and pre-pictorial understanding of the world, and of its physical and moral constraints, already exists in newborn children (Robinson *et al.*, 2007). Simple orders or directives may be conveyed just as clearly and certainly more quickly with pictures. As they are an analog mode of representation, pictures may also be potentially continuous and non-discrete, while sentential systems, with their highly symbolized and abstract symbols, cannot (Camp, 2007, p. 156).

For this reason, road signs, as well as other signs placed in public places of passage and traffic, have always made extensive use of explanatory images, accompanied when necessary by brief verbal instructions. These signs represent a specification and a contextualization of the

2 The principle, as recalled by Moroni and Lorini, and stated by the Italian supreme administrative tribunal (Consiglio di Stato, n. 673/2014) has been constantly reaffirmed in the recent Italian case-law (Consiglio di Stato, sect. IV, n. 2158/2013; Consiglio di Stato, sect. V, n. 4734/2003; Consiglio di Stato, sect. IV, n. 4462/2000; Consiglio di Stato, sect. V, n. 724/1995).

general rules of traffic laws, and are becoming increasingly essential to provide cognitive aid, given the speed of circulation and the variability of the surrounding conditions. It is on this cognitive aspect that I will concentrate in the following sections of the article, in order to understand the factual behavioral effects that the pictorial law has.

4. How road signs affect behavior

One of the most interesting aspects in terms of impact and effectiveness of rules that are incorporated into road signs, may be understood by focusing on the cognition process, and by on this cognition can be framed so that voluntary compliance is enhanced. Images play more on our cognitive "system 1", that is, on our instinctual and automatic cognitive side, rather than on our "system 2", that is, on its conscious and deliberate cognitive counterparty (Kahneman, 2011). This is almost necessary in the case of road signals, because these images have a message to relay in a short time-span.

Even if the effect of communication through pictures may be up to a certain point controlled, (Boehme-Neßler, 2010, p. 153), the use of *cognitive system 1* should ensure immediate and instinctive response to the stimulus. We know that even in deliberate decision-making contexts, such as in the courtroom, pictures may sway decisions: we discovered for example that brain-scan images presented as a proof in expert testimonies may effectively influence judges in their decisions on criminal cases (Baskin *et al.*, 2007).

In general terms, concrete and pictorial thinking prevents losing touch with reality. Images work directly with emotions and create "immersion effects" (Boehme-Neßler, 2010, p. 64). The capacity to react promptly to visual stimuli has been an evolutionary advantage for quite a lot of species, and therefore, complex animals have evolved a system of fast reaction to what images are prompting and to what can be captured at a glance. This is not what happens with text, which needs some level of consciousness, attentive processing and mental effort to be understood. In an experiment conducted with a test on 16 familiar road signs, at certain distances symbols were 50% more legible than written signs (Chan *et al.*, 2016). It is indubitable that symbolic signs are more efficient, in that they provide the information that is needed, without further distractions.

The different treatment that images and text receive from a cognition point of view in our brain has been described as "dual coding" (Paivio, 1971). Images, on the other hand, improve text understanding. In an experiment conducted on a computer-keyboard setting to measure reaction times to road signs, better results were obtained with a combination of graphics and text (Koyuncu & Amado, 2008, p. 108).

Even if they have different functions and in a sense compete between themselves as means of communication, images and texts are also complimentary and may blur into each other, when text for example assumes certain shapes and colors, or is sized differently according to its aim. The abstractness and formality of language does not free it completely from visuality and salience, although it preserves its superiority in terms of providing comprehensive and systematic descriptions of the world.

Overall, it's been demonstrated by empirical research that symbolic messages are generally more quickly recognizable and understandable, although this is not necessarily true for all symbols, at any distance and for any duration (Ells & Dewar, 1979, p. 167). When vision is restricted, the efficiency decrease in understanding is greater for verbal signs than for symbolic signs, which results in experimenters concluding that when there is no possibility to test on the field their efficacy, a symbolic sign should be preferred over text (Ells & Dewar, 1979, p. 168).

Numerous other factors at the individual level have to be taken into account. For instance, older drivers have higher levels of routinary behavior, need for clarity and aversion towards ambiguity, while younger drivers are associated with unlawful, anxious and distracted driving (Kaplan *et al.*, 2018, p. 420).

As I anticipated, it becomes essential to ascertain under which conditions road signals are more or less effective. As one might expect, flashing signs or visual signs that are activated on cue and by the passage of vehicles, produce notable reduction in speeds at junctions or dangerous curves, to the point that these cues are expected to exert an unconscious and automatic response in terms of higher prudence and control. Flashing warnings in general offer increased attentional conspicuity, if compared for example with the use of certain colors, such as red or yellow, that are traditionally associated with risk signaling (Charlton, 2006, p. 504).
Another interesting finding has been the noticeable effect in experienced drivers of the "priming" that happens with the repetition of road signs (Crundall & Underwood, 2001, p. 187). In other words, for drivers that are more familiar with it, a *priming* signal of generic hazard may be particularly effective in eliciting a timely reaction to the subsequent *probe* signal, that indicates the real hazard. As anticipated, the effectiveness of such priming seems to be linked with the level of experience: novices have not developed yet that familiarity with the context that makes them automatically receptive of those clues (Crundall & Underwood, 2001, p. 187). The additional precautions and limitation for newly licensed driver look then all the more reasonable, if novices take on average an additional 1,7 decimal of a second to correctly classify road scenes (Crundall & Underwood, 2001, p. 197). Novice drivers are not as apt in extracting visual information while driving, and therefore require greater cognitive energy to select and process all the relevant stimuli (Crundall & Underwood, 2001, p. 198).
The transmission of information that allows driving behavior to be modified seems not straightforward and explicit. Drivers happen to modify their driving behavior thanks to traffic signs but without even realizing it (Crundall & Underwood, 2001, p. 196). Such a dynamic might be assimilated to an hypothesis of *nudge* (Sunstein, 2015; Thaler & Sunstein, 2009), and I am going to discuss some implications of this discovery in the next section.
These kinds of experiments, which are conducted most of the times in artificial settings, naturally have a potential problem of ecological validity with respect to the research context. The actual pressure that the driver is subjected to in the natural context could lead to reactions of a different nature or extension. However, these results have been substantially confirmed (especially in the Crundall experiments) even with the most realistic driving simulators. In the same way, another common method of investigation, that is interviewing the driver in a real road setting, is normally conducted with a temporal frame that does not exclude the presence of intervening factors that confuse and influence the results.
Legislation on road signs and traffic laws are not always a factor in the different degree of visual cognitive impact of road signs. Road signs are designed to take into account aspects such as visibility or size, but they do not acknowledge the subtle difference between automatically processed and deliberately processed information. In most cases, the physical features of signs are considered just as an aid for a better conscious perceptual activity, and not a constitutive or defining part in themselves.

5. How road signs are evolving

The awareness of cognitive mechanisms and biases (Kahneman & Tversky, 2000) is now taking hold even in social and legal policies, and this is what is analyzed in the present section, expounding some experimental or relatively new forms of signals that factor into their design these behavioral insights. In a legal world of increasing complexity and over-regulation (Caterina, 2008), the plethora of norms is translated into a plethora of signs. However, excess of information causes a lack of attention on the part of drivers, who end up forgetting most of the signs (Kaplan *et al.*, 2018, p. 416). Speaking or listening also creates an ulterior motive for fatigue for the driver, and brings about unwise decisions. One of the single most worrying causes of accidents today is distraction due to the use or mobile phones or other multimedia

equipment while driving (Chan *et al.*, 2016). The problem that was once a lack of information and not enough signage (and in some areas of the world it still is), today has probably turned into an overload thereof (Picture 1 and Picture 2). In this respect, road sign are expected to become more self-explanatory and adhere to the principles of "sustainable safety" (Wegman *et al.*, 2008): functionality and adherence to a hierarchical structure; homogeneity with regard to speed and directionality; predictability in terms of interpretative outcomes.

Picture 1

Picture 2

As Pardo and Patterson correctly point out, there is no such thing as "unconscious rule following", but it's true that certain behavior and attitudes may be oriented through signals that are mainly perceived through "cognitive system 1" (Pardo & Patterson, 2015, p. 178). A clear practical application of this latter insight is the increasing use of active speed warning signs, that is, those signs that actively respond to the driver's conduct (Picture 3). Active signals of this kind obtained an average reduction of speed of 5,8 miles in correspondence with the sign, and of 2,9 miles after 0,2 miles. With subsequent intermittent police controls, this reduction was respectively 6,1 and 5,9 miles, with a decrease of 34,9% of those speeds exceeding by more than 10 miles per hour the limit (Bloch, 1998).

Picture 3

In some versions, active signals also spell the consequence of the driving behaviors, such as the possible penalties in the driving licence point-system (Picture 4), or provide a "social

feedback", by thanking or smiling at the driver who is respecting the speed limit (Picture 5). These signs report in real time non-compliance with the standard, or they may say "thank you" in cases of compliance. Such signals have become particularly common when entering urban areas after a long stretch on a faster road.

Picture 4

Picture 5

Active systems should be particularly effective, as they do not only remind the driver of what their actual speed is: drivers could do this by looking at speedometer on the car's cockpit, but it's certainly easier to look at it without taking the eyes off of the road. What is even more effective in the second version, which provides a feedback to the adequacy of speed, is the feeling that problematic behavior might be exposed. It's not necessarily the discomfort that comes from being recorded by "big brother", because in these active systems, there is no direct recording of the actual speed, and no penalty or fine may be expected from the signaling system itself. It is rather the unconscious social pressure that one's driving behavior is being watched that produces compliance. Behaviors oriented by rules always have a social dimension, in that we tend to act in concert with others, and to be affected unconsciously by what we think the others will think of us (Pardo & Patterson, 2015, p. 183).

This is the same collective logic behind the idea of the "watching eye", that is, those traditional symbolic amulets that are recurrent in several cultures and picture a stylized eye image. While apparently these eye cues were supposed to work against sorcery or bad luck, it has been hypothesized that they also worked by making its bearer better-behaved (so avoiding creating enemies or inflicting self-harm through anti-social behavior). In many other contexts, there seems to be in fact a similar "watching eye effect" that makes people behave differently independent of deliberative evaluation of the costs and benefits of one's action, and that increases law-abiding and cooperative behavior (Bateson *et al.*, 2006; Haley & Fessler, 2005).

In the meta-research conducted by Dear and colleagues, unlawful behavior decreased by 35% in presence of eye cues, whereas CCTV cameras obtained a reduction in crime of just 16% (Dear *et al.*, 2019, p. 269). In the study by Haley and Fessler, "watching eyes" increased generosity in games of economic cooperation between 31% and 55%, depending on the clarity of the cue. Several other low-cost, low-intrusion campaigns working by the same principle have been put in place in order to prevent and reduce bicycle theft, petty crime on trains and littering by drivers, with seemingly good results (Dear *et al.*, 2019, p. 271).

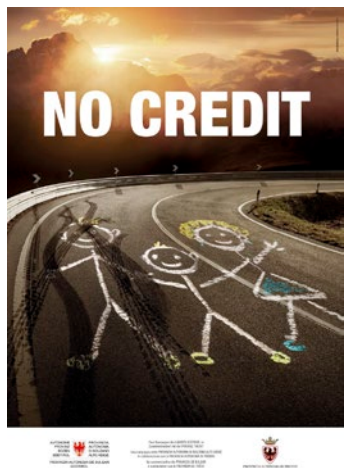
The perception of collective control would therefore have stronger effects than actual control. One explanatory hypothesis behind such puzzling behavior may be derived from evolutionary

psychology (Barkow *et al.*, 1992): we evolved a pronounced sensitivity towards being watched, at first in order to protect us from predators, and subsequently to protect our reputation in wider social systems. Considering the relatively lower costs of these visual cues, of which the active-speed feedbacks described above represents the analogous function (Picture 5), it is surprising how these signals are not as widespread.

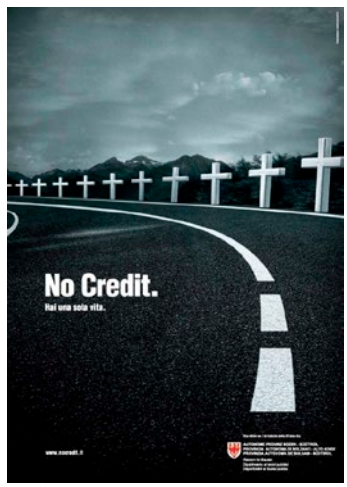
The same kind of measures might be expected to be implemented shortly for all road users, e.g. for the pedestrian or cyclists, in order to prevent jaywalking in dangerous areas or other forms of rule-breaking that might be particularly self-harming. Synthetic vision and artificial reconnaissance technologies should allow all this and make it cost effective, and any necessary means to anonymize such systems, so to preserve data privacy and human dignity, is already there to be put in place.

As previously suggested, these signs may be another form of "nudging". They are relatively cheap, and they do not threaten drivers with ticket and fines. Nudges are in fact opposed to "command and control" types of regulations, because they do not imply the application of sanctions or material incentives. We are dealing here with nudges aimed at compliance. Punitive regulation shall continue to exist, but these signals persuade the user of the road, though unconsciously, that compliance with the rules is important and is in her/his interest. The same thing cannot be said for those semi-automated systems of coercion (in-built speed limitation, or the loud warnings playing in cars until everyone has fastened their seat-bell), which need sophisticated sensors to be installed, adding significantly to the cost of vehicles. The literature on nudges is now extensive (Baldwin, 2014; Barton & Grüne-Yanoff, 2015; Haugh, 2017; Wilkinson, 2013), and using road signs as a case in point, it seems interesting to point out the initiative of the province of Bolzano, in Italy, which uses suggestive images to target risky road behaviors (Picture 6, 7, 8). Pictorial nudges have been already widely used to discourage smoking (Rousu & Thrasher, 2013). These powerful and shocking messages recall the tragic and permanent consequences of what, without the advantage of hindsight, would appear as marginal acts of imprudence. They are placed at the roadside, on large billboards, just like any other road sign. Another example is the informative nudge that appears on the highway panels of the Italian motorway network, which provide statistics on accidents. In both cases, to our knowledge there are no studies on the impact of these measures.

Picture 6



Picture 7



Picture 8

A further development to be expected is that of the speed limit or hazard signals that adapt to environmental and traffic conditions (out-of-car Intelligent Transport Systems - ITS). With the necessary technological and regulatory innovations, the speed limits shown by these signs could be made dynamic, that is, variable according to the aforementioned conditions. Speed limits that are not linked inflexibly with a road section, but that may be adjusted to traffic, weather, visibility, or even to the driver's psychological status, may appear more "credible" and "logical in the given circumstances", and more easily followed as a result (Wegman *et al.*, 2007, p. 336). "In-car ITS" may also be programmed to automatically recognize road signs and speed limits, even when driven in manual mode, and act consequently.

6. Conclusion

In this article, I tried to delimit a field of investigation for possible empirical investigation on the effectiveness of road signs, by defining preliminarily some fundamental concepts in the field of road safety, and secondly by highlighting the issues that I considered relevant from the linguistic point of view. In so doing, I took a position on the limits of a purely semiotic perspective in the study of a social phenomenon such as that of compliance with rules. In this regard, I felt that a normative-semiotic perspective could be integrated by a cognitive perspective, meaning with this latter the overall multidisciplinary approach that seeks to outline a theory of behavior in relation to delimited social and normative contexts, so integrating insights from both the natural and the social sciences and achieving higher degrees of precision and predictability.
Road behavior is usefully analyzable, and therefore orientable, also through the tools of evolutionary psychology, behavioral psychology, and sociology. I believe that at this moment, research that looks at the ecological individual reaction with respect to the social context, can contribute greatly to the field, and I have illustrated this in the section dedicated to empirical research. It is true that in a few decades, the issues of safety and road signs might be a problem of the past, since it is likely that a risky activity such as driving vehicles on public roads, unless for recreational purposes, will be completely entrusted to automated intelligent systems. However, manual driving, or at least mixed forms between manual driving and automatic driving, will be with us for some time, and therefore it makes sense, given the current considerable human and economic impact of road accidents, to ask oneself about the problem of compliance with traffic laws.
Research on road signs becomes particularly relevant as a consequence of the recovery of visuality in modern communication. Indeed, one of the most interesting empirical hypotheses to verify will be that such forms of nudge or "emotional moral suasion", may prove in the end particularly effective when coupled with traditional forms of regulation and punishment. The request to reach quickly large masses of people has undoubtedly contributed to this. There is a need to reduce complexity and to communicate instructions and warnings effectively and rapidly. Focusing on the emotional aspect, however, does not necessarily mean appealing to the pure "populist" instincts (Boehme-Neßler, 2010, p. 137). I have argued that signaling harmful behavior by underlining risks in an individualized way, needn't be incompatible with human dignity, provided this hasn't direct consequences in terms of sanctions and punishment. Finding a balance between words and images is also a challenge for the law, as it is no longer reasonable to retain the idea that the latter is always inferior and subordinate to the former.

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MARIELA AGUILERA
IDH-CONICET-UNC
maguilera@ffyh.unc.edu.ar

PICTURES, CONTENT, AND NORMATIVITY: THE SEMANTIC OF GRAPHIC RULES[1]

abstract

In our daily lives, we can find that different kinds of representational media are employed in normative ways, to express different kinds of rules. Sometimes, this is overlooked by the primacy of discursive representations in our normative practices. However, a look into these practices often shows that they are more complex and richer, and particularly that they include more than one kind of representation. Regarding this, this paper will be focused on the capacity and limitations of different kinds of representational media to express normative contents, that is, to express the content of rules.

keywords

correction conditions, nonlinguistic representation, deontic pictures, instrumental maps

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1. Introduction

We commonly create and employ different forms of representations, such as languages, diagrams, pictures, graphics, maps, and so on. These representational media are used to store and retrieve information in very different ways, which are alternatively selected according to different purposes, and different balances of cost and benefits.

Despite the differences in how they are related to the world, representational media of different kinds often coexist and interact with each other to satisfy a common goal. Also, they can be part of our cognitive, theoretical, and practical activities. So, for example, a seating chart provides information about the spatial relations of seats in a room, by representing seats in rows, and their relations to corridors and the stage. Also, representations can be used in a directive way: the seating chart zoning maps can establish the green areas of a neighborhood; we can use a tube map to plan our journey, and also to *tell* someone the instructions to go from one place to another; we can use a seating chart to locate our seat in a theatre; architects use 3-D models as instructions for building a house, and scientific discourse can be seen as instructions for making models (Harre, 2002).[1] Similarly, researchers from different fields explain the interaction between our perceptions and beliefs in terms of relations between iconic and sentential representations (Heck, 2007).

On the one hand, these examples show that there are promiscuous interactions between representations of different formats, such as relations from sentences to pictures, from maps to sentences and practical activities, from graphics to actions, from models to things in the world, and so on. On the other hand, they illustrate that both, pictorial as well as sentential forms of representation, can be employed in several ways, i. e., in an informative or descriptive way – by representing the world as it is – as well as in a directive or normative way, by fixing the conditions that the world has to attain. Moreover, many times, representations might play a descriptive and a normative role simultaneously (Millikan, 1995).

In this paper, I do not want to evaluate whether pictures play normative functions. In contrast, I assume that in our daily lives there are plenty of interesting examples of pictures that can be employed in normative ways to express different kinds of rules (Moroni and Lorini, 2016).

1 Harre emphasizes the normative role of theories: "Theoretical discourse is not, in the first instance, an attempt (hazardous and underdetermined) to describe aspects of the natural world that we cannot perceive, such as the dance of the molecules or the interior of black holes and so on, but as instructions for making models of them. The kinetic theory of gases, thus read, appears as a set of instructions for making a progressive sequence of models of gases such that the behavior of samples of gas is simulated by the behavior of the model." (Harre, 2002, p. 48)

Sometimes, this is something overlooked due to a philosophical bias that favors the primacy of discursive representations in our normative practices (Brandom, 2000). However, a look into these practices shows that they are often more complex and richer and that they include more than one kind of representation. As Moroni and Lorini (2016) have shown, there are examples of drawing that express deontic, constitutive, and technical rules.

By saying that different kinds of representational media have the capacity for expressing rules, I do not want to say that a representation is intrinsically normative or intrinsically descriptive. On the contrary, whether a representation expresses a rule depends on its function in a specific context. In this respect, the same representation can be used both normatively and descriptively. Similarly, when saying that a representation has normative content, I mean that the representation is used normatively to express the content of a rule. So, by normative content of representation I will refer to the content of a rule expressed by the representation. As I see it, there should be pragmatic reasons to say whether a representation has a normative function, which relies upon its use in certain contexts, upon being under the effect of current practices and conventions, and so on. However, whereas the role of a representation may depend on Pragmatics, that is, on its function in particular contexts, how a representation expresses a content deeply depends on its representational structure.

Particularly, this paper is focused on the capacity of different kinds of representational media to express normative contents, that is, to express the content of rules, assuming that they do. I will focus particularly on some examples of pictures, maps, and diagrams, which are used in normative ways. I will analyze how they are structured, to evaluate their semantic properties to express normative contents. This issue must be distinguished from the problem of the normativity of meaning, i. e., the problem of semantic or linguistic norms (Kripke, 1981). Also, it must be distinguished from the problem of the determination of the content of norms – individually or communally – as well as from the metaphysical question about the ontology of norms – whether they belong to a third realm or they are barely social entities.

I am interested, instead, in the representation of norms; particularly, in the capacity of representational means of different kinds to express normative contents. Of course, not every rule is explicitly represented. Most of them are implicit in social practices. But some of them are crystallized in legal documents, advertisements, street signs and signals, brochures, user manuals, apps, and so on, employing heterogeneous but interactive representational media. In between, I am interested in the sort of normative content that can be transmitted by non-linguistic representational formats. So, with independence of what rules are, and how they are determined, I will explore the limitations and possibilities of non-linguistic representations to express different kinds of normative contents.

Thus, in the following section, I will present some general considerations regarding the phenomenon of normativity. Then, I will introduce Moroni and Lorini's distinction between descriptive and normative graphic representations. In the third section, I will articulate this distinction with the view that representational media can be distinguished according to different sorts of isomorphism between the representational media and what it represents, which in turn determine their satisfaction conditions. However, the satisfaction conditions, thus understood, not always reflect the normative structure of graphical rules. I will go through this hypothesis by exploring different examples of graphic rules, particularly, deontic pictures, Form-based codes, travel maps, and seating charts, to provide an analysis of different ways in which the satisfaction conditions of the content of such representational formats relate to the correction conditions of the rule expressed by those representations.

2. Representational media and normative content

The phenomena of normativity is certainly complex. Rules determine what is correct or incorrect. Also, they have a more or less defined scope of application. What falls under this scope is what is relevant to the rule (Giromini, 2019). Also, rules have a projective dimension: they determine what is correct or incorrect within a relevant extension that includes considered as well as unconsidered cases (Peregrin, 2016; Satne, 2005). So, for instance,

(1) "Children have the right to education"

runs for every child regardless of gender, race, ethnicity, nationality, religion, disability, parentage, sexual orientation or other status. So, the scope of the rule includes persons under the age of 18, regardless of other aspects. Other rules have more unstable scopes, such as the following inscription at the entrance of a playground:

(2) "Only adults with children",

In this case, adults riding on the bike path do not fall under the scope of the rule. The rule is directed to adults entering the playground.[2] But rules are not purely extensional; on the contrary, they are supposed to govern some specific aspects of the relevant extension. Within the domain of what is relevant to the rule, it must be considered what is correct or incorrect. So, excluding your child from school is forbidden regarding (1), and getting into the playground with your child is allowed regarding (2).

Here, I will assume that pictures, maps, and diagrams can also be used in normative ways.[3] According to Moroni and Lorini (2016), pictures, diagrams, and maps can be employed as deontic artifacts, to regulate further behaviors in terms of forbidden, permitted, and obligatory. Also, they can be used as instructions that determines what to do to achieve a particular goal, that is, as expressing technical rules. Finally, some of them can be used to express constitutive rules, creating new entities, such as maps that define countries and their edges.

Moroni and Lorini (2016) suggest to distinguish descriptive from normative use of graphic representations according to the direction of fit:

> In the case of descriptive drawings, the direction of fit goes from the drawings to the world. It is a drawing-to-world direction of fit: the drawings must "correspond" to the world. A geographical map that does not correctly reproduce the geographical

2 This case endorses a particular relation between the sign and the place where it is located. See Lorini and Loddo (2017) for the indexical character of signs like these.

3 Here, I am using Moroni and Lorini's typology for normative drawings in virtue of expressing different kinds of rules. According to this typology, there are three fundamental types of normative drawings: *(i) deontic (or regulative or directive) drawings*, *(ii) constitutive drawings, and (iii) technical drawings* (Moroni & Lorini, 2016, p. 8). Deontic drawings are those drawings that express deontic rules, that is, "those graphic rules that 'regulate antecedently or independently existing forms of behavior'. Those rules signal to people what they can or cannot, must or must not, do in certain places (Searle, 1969: 33)". Traffic signs illustrate this kind of rule. Constitutive drawings "are those drawings that express constitutive rules, i.e. rules that, ..., in one or another sense 'give rise' to, or 'create', new things, mainly, new social (legal, cultural ...) things" (Żełaniec, 2013). Constitutive graphic rules do not produce an event by exerting "pressure" on an individual's behavior (i.e. there is no recipient who either must or can conform to the instruction); instead, they alone produce the desired effect, which is their purpose and *content*: such signs are ends in themselves at the moment when they are created (Carcaterra, 1974)." *Technical drawings express graphic rules* which "are those graphic rules that prescribe behaviors so that the aims of the agent can be achieved". Thus, technical drawings "prescribe a behavior not in itself but as the condition for achievement of a possible end" (p. 9).

area which it represents (i.e. the elements of that area which it represents) must be incorrect.
In the case of normative drawings, instead, the direction of fit is the reverse: it is a world-to drawing direction of fit. It is the world that must "correspond" to the drawings, as in the case of a land-use plan.

Thus, in the case of descriptive representations, the direction of fit goes from the representation to the world: in this case, the representation must correspond to the world. When the representation is normative, the direction of fit goes in the opposite direction, from the world to the representation. So, in this case, the world has to be accommodated to the representation. In the next section, I will push some of these ideas further, to explore the capacity of representational media of different kinds to express normative contents.

3. The content of graphical rules

Despite the varieties of representational media and their pervasive presence in our daily practices, theorists often tend to emphasize or smooth their differences from linguistic systems. In the first group, the full range of pictures, maps and diagrams are conceived under the model of iconic or pictorial representation. While, on the second group, complex representations – such as diagrams and maps – are conceived as a kind of linguistic representation. In both cases, the assumption is the existence of a sharp dichotomy between iconic and sentential systems (Fodor 2007, 2008), which overlooks the spectrum of representational media and their impact on our practices. Hereafter, in contrast, I will assume a gradualist perspective which states that pictorial and sentential media can be distinguished according to differences of degrees.
Particularly, I will motivate the view that representational systems can be distinguished according to different sorts of isomorphism. Based on this view, I will analyze the capacity of different kinds of representational media to express normative content. In other words, I will analyze how pictures, maps, and diagrams can play a normative role in the context of some social practices. To do that, I will be focused on their representational structure, and their capacity to express correction conditions according to different kinds of rules.
According to this view, representational systems obey isomorphic relations. This perspective can be traced back to Wittgenstein's picture theory. According to this theory, the logic structure of language reflects the structure of the world, and particularly, the predicative structure of language mirrors the metaphysical relations between properties and instances (Wittgenstein, 1921). But language is on the top of abstract isomorphic relations, other representational formats exhibit isomorphic relations with different degrees of abstraction (Camp, 2007; Shea, 2014). In the following section, it will appear that the more abstract the isomorphism between the representational medium and the world, the larger is the space for arbitrary symbols and conventions.
Whereas language is on the top, pictures are at the bottom of the isomorphic representations. According to Camp (2007, p. 156), pictures exploit a direct isomorphism: each discernible part of an image – points, lines, and regions – replicates the visual appearance of the corresponding point or region represented. Fodor (2008) has argued that since each part of a picture has the same syntactic and semantic function than any other, pictures lack logical form. This means that they cannot be analyzed in terms of logical structure. However, we can take the characterization of the isomorphism provided above to sketch the satisfaction conditions for pictures: a picture is accurate in case of variance in color, light, and shapes, mirrors variance in color, light, and shapes of the represented scene.
Thus, if we distinguish descriptive from normative pictures according to the direction of fit, as suggested by Moroni and Lorini (2016), we can change the direction of fit of the satisfaction

conditions of pictures sketched above, and propose a world-to-drawing direction to determine what counts as correct or incorrect. Then, we could say that a scene is correct according to a rule, R, in case of variance in color, light, and shapes, mirrors variance in color, light, and shapes of the picture. However, I want to argue that whereas a world-to-drawing direction of fit can be considered as a necessary condition for normative pictures, the correction conditions of the normative content do not match with the satisfaction conditions of the representational content, at least as they have been stated above.[4] To do that, in what follows, I will analyze some examples of normative pictures.

3.1. Deontic pictures

Interesting examples of normative pictures can be found in old (and not so old!) magazines, which were used to inculcate housewives' manners and their role in a house. Nowadays, these drawings give us an idea of the ideal of women at that time, but then they were used to impose that ideal on women and regulate their behavior. So, we might say that they function as a sort of deontic artifact. Let us see the following picture (figure 1).

Figure 1: from *The Good Wives' Guide* (1953).

Among other things, the image suggests that a good wife belongs to her house and that she is responsible for housekeeping, and happily and submissively accept that duty. Let us assume that something like that is the normative content of the image. Now, do analyzes in terms of the satisfaction conditions formulated above help? In other words, do analyzes in terms of variations of color, light, and shape, provide the correction conditions for the rule that the picture is supposed to express? Let us consider another example.

3.2. Legal graphics

According to Moroni and Lorini (2016), visual representations are also employed in normative ways in legal documents. Particularly, they have focused on graphics that are part of Form-based codes (FBC), from New Urbanism trends in development, that constitute instances of normative drawings (see Figure 3). FBCs are tools for planers and developers, designed to regulate zoning, street design, sidewalk and other people-scaled public spaces (Madden & Russell, 2014). In FBCs, "prevalently visual codes are employed to regulate the *form* of the built environment" (Moroni & Lorini, 2016, p. 6).

4 The notion of normative content of a representation, as it is understood here, is an abbreviation to refer to the content exploited with normative purpose, the content of a rule, such as the form that buildings must have regarding sidewalks, the journey traced in a map, etc. By the notion of representational content I mean the content of the representation, which may or may not be employed in a normative way, such as the content of a graph of a FBC, or the content of a map.

> The New Urbanist idea is that in this case, people can see and more easily understand urban rules. "Form-based codes are graphic and designed to be easy to use and understand" (Purdy, 2006: 4). In other words, "Form-based zoning codes rely on images, diagrams, and matrixes to make the requirements and physical vision understandable to the general public, government officials, developers, and the professionals who work with them" (Geller, 2010: 81). Moreover, "Use of easy-to-comprehend diagrams and graphics reduce the amount of paperwork in a form-based zoning ordinance... The clarity that form-based codes afford alleviates the burden imposed on a developer during the administrative approval process" (Barry, 2008: 317). (Taken from Moroni and Lorini, 2016)

According to Moroni and Lorini (2016, p. 6), in FBCs, there is a closer "plastic proximity" between the graphic rule and the reality that should correspond to it.[5] Precisely, that plastic proximity can explain why visual representation are so effective: i) they can make it easier to comprehend the normative content of ordinances or social practices; ii) they can represent in simultaneous different aspects of a scene: spatial disposition, physical appearance, functional properties and relative size of objects, and so on. In the particular case of FBCs, they are supposed to be compressible for landowners, developers, neighbors, planning and zoning administrators, public officials, and the general public, and all of those parts affected by the development of a place. Also, they integrate different goals and perspectives: the public and private realm, such as street parking, street trees, travel lane, pedestrian areas, and how they interrelate with buildings (Madden & Russell, 2014).

However, that "proximity to reality" of pictures can be problematic to express the normative content of rules. For instance, in figure 3, it is difficult to know what it is intended to be regulated by the picture: the kind of people that can use the sidewalk, or the way that the street can be used; the dispositions of the trees or their type, the way cars can be parked, the height of the buildings, or their color, or all of that. In other words, it is difficult to understand what specific aspect of the reality it is intended to govern. Nevertheless, there is a sense in which it is intended that the picture expresses all of that: that the sidewalk can be used as pedestrian transportation, which coexists in a friendly way with private buildings and the lane, that the parking area is located in a way that does not affect circulation, the presence of urban trees, and so on. At the same time, the proximity of the picture with reality also helps to reduce the scope of the normative content. Since just a few sets of situations can fulfill the satisfaction conditions of the overall representation, the scope of the rule may be extremely local (I think that something similar can be said about maps)[6].

On the other hand, it is dubious that the satisfaction conditions (and the direction of fit) of the overall content of the picture can determine the correction conditions of the rule expressed; that is, of the normative content of the picture. Whereas the satisfaction conditions of the overall picture depend on the visual appearance of a scene, the correction conditions of its normative content may be related to space, land, buildings, people, behaviors, practices, and functions of entities of different kinds.

Thus, it would be – at least – desirable that normative pictures not merely demarcate the extension of the norm – that is, the possible cases that might be considered under the rule – but also the specifics *aspects* from that extension that are ruled by the rule (for instance, the

5 Along this line, Camp (2015, p. 305) states that pictorial systems require fewer translations from perceptual inputs, and thus are easier to acquire and integrate to cognition.

6 See Lorini & Loddo's (2017) distinction between spatial sphere of validity (territory) and the spatial sphere of reference (entities) of norms.

Figure 2: an example of an FBC graph, taken from Lorini and Moroni (manuscript).

use of space, things that can be done there, the behaviors allowed and forbidden, and so on). So, when the isomorphism is so direct, it might turn difficult to separate what is relevant for the rule – in terms of extension or aspects – that the picture is supposed to express. Firstly, whereas the isomorphism is visual, rules are about persons, spatial arrangements, behaviors, and so on. In other words, even though pictures obey a visual isomorphism, their normative content cannot be specified in terms of visual features.[7] So, in the case of pictorial rules, it is indispensable to adopt another level of abstraction and generalization to understand what the correction conditions of the rule are. Secondly, since pictures integrate lots of information, background or contextual information is required to discriminate what aspect of the reality it is intended to govern. Compare, for instance, figure 2 with figure 3: Although both figures have – in broad terms – the same objective, whereas figure 2 obeys a visual isomorphism, figure 3, instead, exploits a metric isomorphism that represents with more accuracy and precision what the code legislates, that is, regulating building form and function of a place.

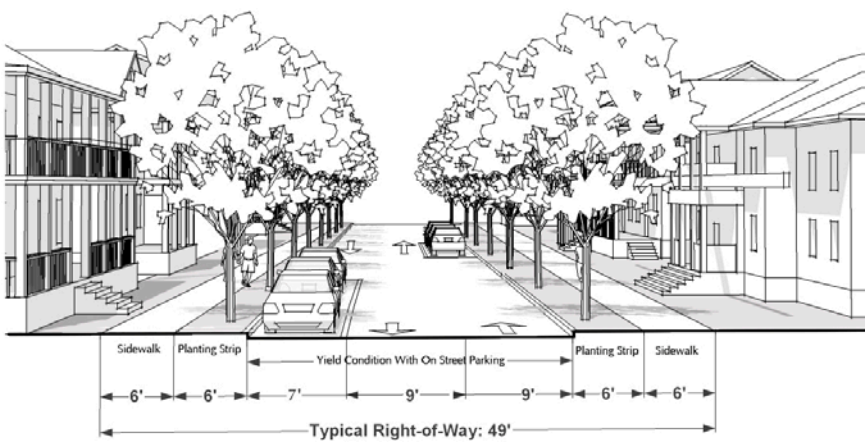

Figure 3: schematic cross-section of a mixed-use street from the Sarasota county, Florida FBC.[8]

7 It might be argued that the satisfaction conditions of pictures do not match with the visual isomorphism either; for instance, the satisfaction conditions for the Gioconda cannot be understood in terms of the variations in light and color. However, I will leave aside this question here.

8 Downloaded from http://plannersweb.com/2014/12/fbc3/.

Thus, the difficulties of pictures to express the content of rules – the lack of generality and precision – are easily avoided and also can be used for some benefits. Since pictures – as well as other representational media - are not used in isolation, other external cues can be employed to gain generality and determine their normative content. In this sense, pictures are often joined with legends such as "Good House Wife's Guide", in figure 1. Those legends, on the one hand, help to determine the extension of the rule and, on the other, help to specify the normative content of the picture and its correction conditions. Similarly, graphics from FBCs, for instance, can be interpreted regarding general principles, such as "Neighborhoods should be compact, pedestrian-friendly and mixed-use", in figure 2, or legends such as "Schematic cross-section of a mixed-use street from....", in figure 3. Furthermore, the local character of some normative pictures can be useful to express rules directed toward specific regions, places, contexts, and goals from particular communities, which can be helpful to narrow down the scope of the rule. Someone might say that pictures do not have the linguistic counterparts for normative words, such as *ought* to, *must*, *should* and so on. However, there are cases in which this vocabulary is useful but unnecessary, as can be observed in the example provided below "Only adults with children". And, what is more interesting, there are normative pictures that employ different resources to highlight their normative character of a representation. For instance, in figure 4, different drawings have been introduced to represent the adequacy of the area to new urban standards.

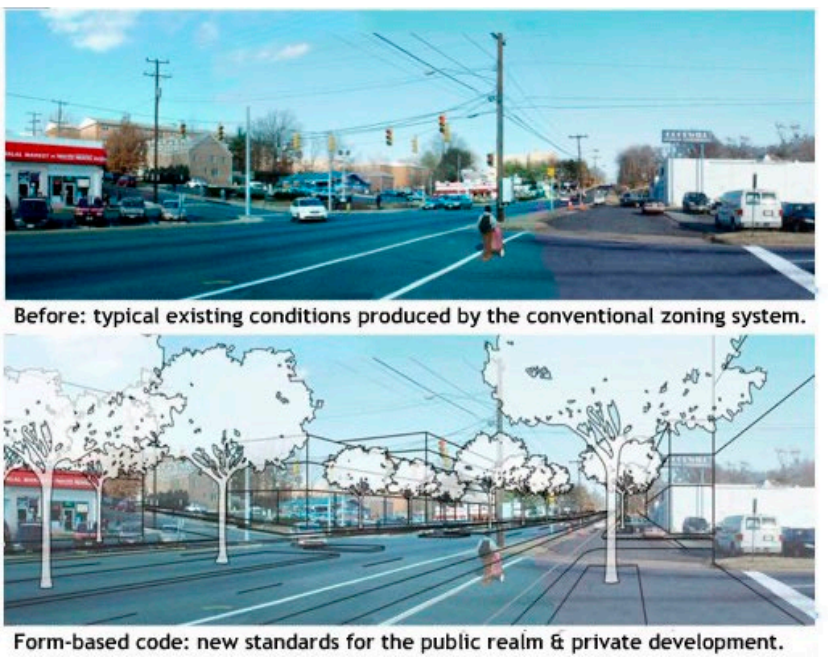

Figure 4: example of a FBC, extracted from PlannersWeb.

3.3. Travel maps

Some maps are a little bit like pictures and a little bit like sentences, but they can be distinguished from both. On the one hand, like pictures, maps also rely on some kind of isomorphism, but this can be very abstract and formal. This is consistent with the thesis that representational media can exploit isomorphic relations in different degrees of abstraction. So, for example, whereas pictures obey a visual isomorphism, some maps instead involve a metric structure that abstracts itself from visual features, whereas topological structures abstract from both, visual and metric features and relations.

On the other hand, like languages, maps' systems can introduce arbitrary symbols and conventions. This alleviates the informational burden of the representations since the representation does not need to reproduce the visual appearance of an entity to represent it. Also, the introduction of symbols increases the expressive power of maps, since they can represent abstract properties. As a result, maps can represent with precision the content of the rule that they express and its correction conditions. So, whereas pictures depend on background or external information to specify their normative content, maps instead possess more internal resources to isolate their normative content. Consequently, we will see, maps are very efficient for playing a normative function.

Most maps rely on spatial isomorphism by representing the localization and distance of objects and regions in space, concerning specific purposes, such as navigation, delimitation, projection, etc. To do that, i) maps do not need to replicate the visual appearance of the objects and the regions represented, since spatial properties abstract from visual properties. ii) Maps do not need to replicate every object of the scene either. On the contrary, maps are designed according to specific purposes. Thus, they represent only entities and relations that are relevant to those purposes. For example, political maps are designed to represent the governmental boundaries of countries and states. Usually, they represent cities, but only the more important ones. Physical maps, instead, mainly represent landforms of a terrain. Usually, they represent only the highest peaks and the most important rivers, not all of them. While physical maps are mostly descriptive, political maps are often used as instruments for legal regulations (Moroni & Lorini, 2016).[9]

However, many maps combine several kinds of representational resources that go from visual or iconic elements to symbols: Google-street maps, for instance, represent both, network roads and 3D visual perspective; travel maps might include topography, the localization of cities and towns, network roads and other travel information, such as points of interests and service areas (for instance, Michelin maps, and National Geographic maps). Let us focus on travel maps.

In the case of travel maps, they represent road network, including major highways, main roads, tracks and trails, city edges, diverse points of interest, and so on. Travel maps often employ symbolic elements, such as a red cross for a hospital, girl and boy figures for restrooms, dots for cities, etc. They also exploit a color code: variations in color can denote variation in the function of roads and can be used to distinguish highways from collectors and local roads. Similarly, zoning maps separate by colors areas with different functions: for instance, yellow for building areas and green for public areas.[10]

Since the isomorphic relation of maps is highly selective, the satisfaction conditions for this kind of media are more general than the conditions that run for images. "More precisely, the map is correct only if its geometric structure replicates salient relations between objects represented by the map". (Rescorla, 2009, p. 390) Since they obey an abstract isomorphism, there is considerable space for arbitrariness; hence, maps can introduce symbols and

9 Maps not only can be employed to regulate behavior or as instruction for navigation, but also to create a new ontology. This is the case of what Lorini and Moroni (mansc.) call "constitutive maps". Some political maps, designed to show the governmental boundaries of countries and states, are constitutive in this way:

> These are maps that neither describe (objects) nor prescribe (behavior), but instead constitute something. This is the case, for example, of maps drawn by legal authorities with the power to define the borders among nation-states. For instance, as Barry Smith and Achille Varzi observe, when in 1922 Sir Percy Cox (the British High Commissioner) drew lines on a map defining the boundaries of Saudi Arabia, Iraq, and Kuwait, "he thereby added new non-physical ingredients to the world." (Lorini & Moroni, manuscript)

10 Whereas the employment of different colors might be based on psychological or practical reasons (Lloyd, Rodgers, & Roberts), from a semantic point of view, they are arbitrary.

conventions to represent specific properties. Thus, on the one hand, the localization and distance of markers and regions in a map replicates the localization and distance of objects and regions in the world, upon a scalar factor. On the other hand, other physical properties of the markers – such as shape and color – might not replicate the physical properties of the things represented, but they are used in a semantically arbitrary way to express different entities. Based on the fact that they obey a metric isomorphism, we could formulate the satisfaction conditions for this kind of map in the following way: A travel map is accurate in case the distance relation between lines and markers replicates the scaled distance between pathways and particular places represented by the markers.
Travel maps are mainly used for journeying or travel planning, that is, some of their main functions are normative: for instance, if someone is in point A and wants to go to point B, they can use the road map as an instruction for navigation. Since it expresses a technical or instrumental rule (such as *if you want A, do B*), this would be a case of instrumental drawing (Moroni & Lorini, 2016).[11] Since maps are designed according to a spatial but abstract isomorphism, and according to a particular purpose, it is pretty clear what they intend to regulate when they are used normatively. Particularly, a travel map can represent a journey – which consist of path construction, "assembling a path from one or more route segments, and path selection; that is, choosing the best one of several alternative paths" (Lloyd, Rodgers, & Roberts, p. 412) – by somehow isolating the roads and intersections that should be taken to go from one point to another. In this sense, the satisfaction conditions of maps help to determine the correction conditions of the rule that the map is meant to express. Thus, not only they obey but also exploit a spatial isomorphism for normative purposes.

3.4. Seating charts

Other maps also abstract from certain spatial relations, to achieve very specific purposes. Seating charts, for example, rely on a topologic isomorphism; by representing the distribution of objects in an abstract space, and their disposition to other objects (arrangement, up/down, left/right, front/behind, and so on). Hence, they are highly abstract representations since they ignore not only visual features of the objects represented – i. e. their shape or color – but also metric relations, such as length and distance. For instance, figure 5 provides information about the spatial relations of seats in a room in a very abstract way, by representing seats in rows, and their position and relation to corridors and the stage. To do that, it ignores other features of the scene represented (i. e. distance, shape, size, visual appearance and physical structure of seats, etc.). But it provides information that is enough and appropriate if we want to know the disposition of the seats or the capacity of the room. But seating charts can also be used in a normative way; for instance, as a blue-print for designing further theatre rooms, or if – already in the theatre – we want to know where to sit. So, we can use the chart to find our way to the seat that we paid for. Like in the case of maps, the selectiveness of the topological isomorphism gives rise to the introduction of arbitrary elements that increase the expressive power of the representation. This incorporation not only enlarges the repertoire of representational elements but also makes their representational content more precise. While the distribution of markers in the chart denotes the spatial distribution of seats in the room, dots are used to represent seats, numbers to represent rows, but colors might be freely used for representing the price of the tickets or the rank of the seat (for instance, in a graduation ceremony, pink for students, blue light for their families, etc.). So, thanks to the introduction of arbitrary symbols and stipulated conventions, these representational media can selectively represent further aspects of a scene, besides the geometrical structure.

11 See endnote 2.

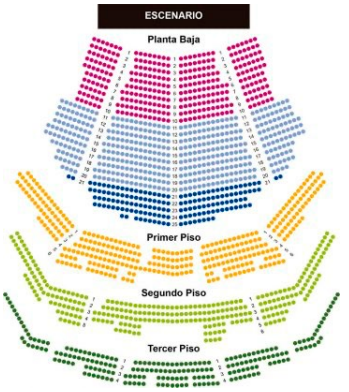

Figure 5: a seating chart from a theatre room

By means of both, the selectiveness of the isomorphism and the introduction of arbitrary symbols, these kinds of representations can express in a highly precise way a normative content: such as *if you are a student, find your seat in the pink area*. In this sense, the aspects that the instrumental rule is supposed to direct are already isolated by the representation; i. e. the spatial arrangement and localization of the seats, in figure 5. In this sense, compared to normative pictures, such as FBCs, the normative content of this kind of representation – that is, its capacity for expressing a rule – does not entirely depend on background knowledge or contextual information. Although it is required to fix the meaning of the symbolic elements (such as grey regions in a map corresponds to parking areas, or pink seats are reserved for students), once this meaning is fixed, it is pretty clear what is being regulated by the representation.[12] So, there is a sense in which the satisfaction condition of the representational content matches with the correction condition of the normative content.

4. Some final words

Pictures, maps, and diagrams are used in normative ways to express rules, ordinances, and legislations of different kinds. There are also other representational media that pervade our normative practices as well: texts, organigrams, flowcharts, treemaps, and so on. In this paper, I have focused on the structure of some representational media to analyze their capacity to express rules or, as I have been saying here, normative content. In doing so, I have adopted a gradualist view according to which different kinds of representations can be distinguished in terms of isomorphic relations that present different degrees of abstraction.

I have analyzed graphic representations of three different kinds: pictures, travel maps, and seating charts. I have suggested that the more direct the isomorphism is, the easier is to comprehend the representational content. Inversely, the more abstract the isomorphism is, the greater the expressive power of the representation. So, whereas the content of pictures might be so easy to understand, they might have some difficulty to express with autonomy the content of rules. Maps and diagrams, instead, are characterized by a formal abstract

12 These properties – precision, generality and autonomy – and their normative functions are instantiated in traffic sings (see figure 4). These kinds of sings are conventional devices, which are characterized by being comprehensible and precise. Despite the fact that they might have some analogical or pictorial ingredients, they do not exploit a direct isomorphism to play their normative function. For instance, the direction of an arrow represents the lane direction; that is, the direction that drivers must follow. However, the fact that the sign represents the lane direction, and moreover, the direction that it is pointing out – left instead of right – is something that does not rely on any isomorphic relation, but in social practices and conventions.

isomorphism, which enables the introduction of symbolic and conventional elements. As a result of both, the abstraction and the arbitrariness, these representational media can be used to express normative contents in a very precise and comprehensible way. Hence, they can be used as powerful artifacts for the expression of rules of different kinds.
The ideas sketched here are only exploratory. Moreover, many issues deserve attention: such as the particularity of linguistic representation to express normative contents, the cooperation of different kinds of media to express normative contents, the normative relations between different kinds of media, and so on. I hope that the ideas developed here help to motivate their consideration.

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GUGLIELMO SINISCALCHI
University of Bari "Aldo Moro"
guglielmo.siniscalchi@uniba.it

DEONTIC VISUAL SIGNS. BETWEEN NORMATIVE FORCE AND CONSTITUTIVE POWER

abstract

The most of legal theories in the twentieth century have always asserted that rules are product of linguistic utterances and that they have nothing to do with "visual culture". In this paper I show, on the contrary, that the visual dimension is crucial to understand and found some legal-philosophical discourse. The relationship between images and law is always bi-directional, by the first direction following the way from law to images, and by the second one, vice versa, passing from images into the universe of normative discourse. In these pages I do not explore the second direction; I limit myself to investigate the first way asking two questions relevant for the construction of the legal order: Are there visual signs in the normative language? And, if so, what function do they have?

keywords

visual rules, traffic signs, social ontology, deontic power

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1. From words to images

Most of the legal theories from the twentieth century have always asserted that rules are the result of linguistic utterances and that they have nothing to do with "visual culture". The modern concept of "law" rules out every influence with visual elements and exclusively prefers the textual dimension: terms such as 'rule' and 'law' have always been put in a semantic relation with the terms 'word' and 'text'.

Recently, the French philosopher and legal theorist Pierre Legendre reasserted the intrinsic relation between law and visual dimension with the concept of "nomogram".

"Nomogram – Legendre specifies – est formé à partir de deux termes grecs, *nomos* νομσ (loi, règle, usage, ce qui a été adjugé, equivalent latin: *institutum*), et *gramma* γραμμα (tracé, schema, écrit, letter...) (Legendre, 2009, p. 271). While *nomos*' recalls the visual act of appropriation, measurement or occupation of a space, '*gramma*' further specifies the visual component in an original symbolic and ritual dimension, completely neglected by modern law theories.

It is a figurative dimension – the so-called "*figuralia*" in Legendre's language – often found, for example in Medieval jurists' texts which Legendre deems as indispensable to recover to comprehend new normative processes of this post-modern era.

According to Legendre, the normativity in this globalization era is not a mere textual and legal phenomenon anymore but it consists of "multiple writings of normative"; alluding to visual expression such as dance, ritual, cinema, painting, emblems and any other socially relevant normative signs[1].

The "nomogram" concept encompasses both visual elements and items belonging to the legal language proper – i.e. rules that are manifested through the language of images – as well as images or signs which compose law meta- language – i.e. pictorial or cinematographic images which tell us about the juridical universe.

In these pages I will not investigate the legal meta-language, but rather highlight some *signs* – not only rules, but also traces, images, material objects[2] - which witness the relevance of the visual dimension in the construction of the legal discourse.

1 For more on the concept of the "nomogram" see especially: Legendre (1992, p. 60); Goodrich (2006, pp. 13-34); and Heritier (2013, pp. 24-48).

2 See André Lalande's definition of 'sign': *"Objet matériél, figure ou son, tenant lieu d'une chose absente ou impossible à percevoir"* (1962, p. 991). On the concept of "sign" see: Eco (1973).

2. Visual rules

While the works of two legal positivists such as Hans Kelsen and Herbert L.A. Hart strongly support the idea that rules are expressions of utterances or linguistic propositions, these authors explicitly or implicitly admit the existence of rules that are manifested through visual signs[3]. A clarification is needed here: these are signs that entail a rule and are limited to "translating" the sense of the rule into something visual. The paradigmatic case considered by both authors is that of road signs, understood as a set of rules (prohibitions, obligations and permissions, but also gestures, directions and advice) crystallised in generally widespread and recognisable images or visual impulses that serve to regulate pedestrian and motor vehicle traffic[4].

In *Eine phänomenologische Rechtstheorie* (1965), Hans Kelsen introduces the topic of *visual rules* in reference to the colour of traffic lights and the gesture that forces car drivers to stop a police officer makes. Kelsen states that not all rules must be expressed in linguistic utterances: there are also gestures, such as the movement of a police officer's hand or a red traffic light, which assert the full meaning of a rule.

Likewise, in *The Concept of Law* (1961), Hart recalls the red traffic light to serve as an example for one of the key points of his theory of law: the difference between an "internal point of view" and an "external point of view."

According to Hart, to an "external observer," the red traffic light can only be an indication of the likely halting of traffic: by repeatedly watching the behaviour of the cars, the observer can easily predict what will happen every time the light changes from green to yellow and red. The visual signal only testifies to the existence of a habit, a behavioural regularity. In the case of an "internal observer," i.e. an agent who participates in and acknowledges the rules of a legal system, the turning on of the light expresses the existence of a genuine rule bearing a penalty.

The paradigmatic cases cited by Kelsen and Hart not only state the existence of visual rules, albeit implicitly, they also suggest the visual element has a *pragmatic* function in terms of the legal force of rules.

Could we imagine a road marking consisting of long and complicated linguistic propositions? It would be the very legal force of rule that would be degraded. Traffic signals - both signs and light pulses - must necessarily have two characteristics: they must be immediately apparent and need to "speak" a language that is as general as possible. Both features are ensured by the iconic dimension of these rules[5].

It is no coincidence that Hart chose to exemplify the difference between internal and external point of views in terms of the perception of a traffic light. It is a rule that, by virtue of the visual element, can be perceived and understood immediately by a generality of observers/ agents (both "internal" and "external") who possess different levels of knowledge of the set of rules.

3 Compared to Hart, the relation between linguistic proposition and rule in Kelsen is much more complex and it should be investigated taking the evolutions of Kelsen's philosophy into account starting from Kelsen (1934) up to the Kelsen (1979).

For a deeper analysis see: Conte (2007, pp. 27-35), in which the author indicates five referrals to the "norm" word. A deontic sentence, a deontic proposition, a deontic utterance, a deontic state-of-affairs and a deontic noema. It must not be forgotten that, as Conte underlines, there are authors, such as Rodolfo Sacco and Theodor Geiger, who have denied the equation *norm=Normsatz* [deontic sentence]. It would be interesting, also in Kelsen, to investigate the relevance of the concepts of "deontic state-of-affairs" and "deontic noema" for the construction of a more "visual" concept of rule.

4 On the importance of road signs for the theory of the law see: Studnicki, *Traffic Signs*, (1970, pp. 151-172); Lorini (2011, pp. 1969-1976); Lorini (2017, pp. 421-441).

5 The universal semantics of traffic signs is highlighted in Wagner (2006, pp. 311-324).

Thus far visual signs are limited to simply "translating" the meaning of a rule.
Two questions: are all traffic signs the translation of a legal rule? And which kind of juridical rule can be interpreted by these signals?
Firstly, traffic signs must be set apart from other kinds of visual signs: geography maps, atlases, signs that point to particular places or subway/underground maps are all examples of signs that do not translate juridical rules but just provide a series of multiple information (also regarding the actual presence of deontic signs like no-entry signs, borders, etc.) to the observer. Public spaces such as railway stations, airports or museums often offer this information via graphic displays. All these kinds of signs which guide our sight never have a deontic force: they are mere information signs which do not regulate our life[6] from a legal point of view.
Similarly, signs that do not "translate" but "mimic" the presence of a juridical rule have no deontic force. Just think of a signal of "no entry" drawn by someone to protect the privacy of their house. Even if this sign has the same aesthetic shape of a visual rule, it does not have any juridical validity.
What are the rules that the traffic signs translate?
In a significant passage of *Directives and norms* (1968) Alf Ross highlights the nature of particular *traffic signs*: parking rules. Ross juxtaposes these rules to chess rules.
According to Ross, parking rules are particular traffic signs that regulate parking in a public space. They regulate the behaviour of drivers within enclosed spaces specifically assigned to vehicle parking. Ross compares these deontic signs to chess rules. Just like drivers, chess players must move pieces following chessboard geometry. There is a remarkable difference however: the activities which are regulated by traffic signs are acts that can be done without the presence of a rule (*natural activity* as Ross puts it). Chess rules are conditions of conceivability and possibility of the moves of the game itself. These rules make it possible for the acts which they themselves regulate.
In the first case we talk about "regulating rules" which just guide acts that naturally exist or exist independently from the rule. In the second case, however, we talk about "constitutive rules", in other words, rules which order acts which would not exist without the rule. While the concepts of pawn or driver exist independently from traffic rules, the concept of "bishop" exists only based on the rules of chess.
"This essential difference – Ross writes - can be expressed by calling parking rules *regulative* and the rules of chess *constitutive*"[7] (Ross, 1968, p.53).

6 In these pages I will not consider the complex ontology of geographical objects such as maps or atlases. I merely distinguish between signals that translate a legal rule (visual rules) and other signs that contain multiple indications including, of course, even with the presence of deontic force signals. On this type of objects see: Maynard (2005); Maynard (2015, pp. 27-48).
On the specific deontic value of maps and geographical maps such as urban planning plans see: Lorini, Moroni (2017, pp. 318-338).
7 Ross states: "The parking rules laid down by the police are concerned with the activity of 'parking a car', that is, with leaving it unoccupied in a public street. These rules prescribe how a person who wants to park his car has to behave. The rules of chess seem, in a similar way, to be concerned with the activity of 'playing chess', and to prescribe how one who wants to play the game has to behave. [...] Parking a car is a 'natural activity'; by this I mean an activity whose performance is logically independent of any rules governing it. Cars were parked before parking regulations existed, and it would be an obvious absurdity if I said that I could not park my car because of the absence of parking regulations in this town. Playing chess, on the other hand, is not a 'natural activity'. To play chess is to undertake certain actions according to the rules of chess" (Ross, 1968, p. 53).
In the now vast literature dedicated to the concepts of "regulatory rule" and "constitutive rule", I just want to point out: Conte (1995, pp. 237-252), Searle (1996); on the "eidetic-costitutive rule" and the "anankastic-costitutive" concepts see: Conte (1995, pp. 313-346); Conte (1995, pp. 517-561);. For an analysis of the various types of "constitutive

It should be clear now how traffic signs are regulative rules which are visually shaped exclusively in force of the pragmatic function of these particular norms.
If the *visual rules* are the translation of legal norms, the visual dimension of constitutive rules suggest the idea that there are signs capable of witnessing the existence of systems of rules, institutions and organizations.

3. Institutional signs

Are there any visual signs that are not simply related to a rule but can, by their mere presence, testify to the effectiveness of the institutions and legal order? In this case, the visual sign would be indicative of a widespread deontic power not attributable to a single and well-defined rule, unlike a command to stop or a traffic light turning on.
A possible answer to our question is found in the theory of "institutional facts" by John R. Searle. In the volume *The Construction of Social Reality* (1995), Searle draws a fundamental distinction between what he calls "brute facts" and "institutional facts": the former belong to the sphere of the phenomena described by the natural sciences, the latter are the result of a collective agreement between human beings. "Institutional facts" include citizenship, marriages, borders, laws, and so on.
Institutional facts are the result of constitutive rules which, according to the famous formula "*X counts as Y in C*", assign through collective intention, agency functions to "brute facts", creating the institutional dimension of our common life.
That is why Searle identifies the verbal signs that help us to know and recognize "institutional facts" (which have an epistemic function): permits, passports and public officials' badges are signs of the existence of a series of "institutional facts" that we could not otherwise either touch or see. Searle defines these signals as "status-indicators[8]".
Generally, these "status indicators" prefer written form: in complex societies, the most common and widespread indicators are passports and driving licenses. This does not detract from the fact that there are also "indicators" that materialise in visual signs. As Searle writes, some status indicators do not need to be explicitly linguistic, that is, they do not need to be expressed through words.
Two examples: wedding rings and uniforms. In both cases we are faced with signs that can be grasped visually, clearly testifying to the existence of "institutional facts" such as marriage and the police. Though Searle considers the meaning of these status indicators as equivalent, we will see how these two examples can be configured to represent different hypotheses of the legal significance of visual signs.
Let's consider the uniforms first. What differentiates a traffic warden's command to stop from the turning on of a red traffic light? Both visual signs ask the recipient to stop their car. If we limit our analysis to the legal meaning of the gesture expressed by these signs, we would have no doubts about their equivalence. Even Kelsen, in the example considered above, says that the traffic warden's gesture and the traffic light are both cases in which the rule need not be expressed linguistically. Yet, if we shift the gaze from the meaning of the gesture to the aesthetic dimension of the context, we quickly realise that the presence of a person in uniform is very different from the perception of an impersonal traffic light signal. As Searle writes, the uniform includes a deontic power that is rooted in the symbolic value of this particular "status indicator": the uniform worn by law enforcement plays an expressive, ceremonial, aesthetic and, as Searle specifies, even constitutive function of the essence of a policeman.

rules" see: Azzoni (1988); Żełaniec, (2013).
8 For a precise reconstruction of the debate on the epistemic or constitutive function of "status indicators" see: Derrida (1988); Ferraris (2012). On the ontology of documents see: Smith (2014, pp. 19-31).

While the verbal status indicators - signatures, passports or documents in general - only have one epistemic function in relation to institutional fact they represent, visual indicators such as uniforms also have a constitutive function.
But what does this mean? It is clear that a uniform does not constitute the essence of a police officer because there are also non-uniformed police officers. Searle responds by saying that the constitutive dimension of these indicators lies in their symbolic power. The presence of a police officer in uniform is not the simple translation of a rule, as in the case of order to stop indicated by a traffic light, but it is the symbol of the presence and the coercive force of an entire legal order. If, as Kelsen says, the legal meaning of the gesture of a policeman and a red traffic light is the same, the order to stop, the difference between the two signs lies in their symbolic value: the aesthetic dimension of the indicator affects its deontic power.
As such, just as there are simple visual rules that, to be effective, must necessarily be perceived visually, there are visual signs that do not relate to individual rules, but that are constitutive of the deontic force of the entire system. The constitutive power of these signs lies in their symbolic value.

4. Axiotic signs

Now I will consider the example of the wedding ring. Searle believes that wedding rings and uniforms represent similar cases. As with the uniforms, we know that a ring is not essential for establishing the status of a husband or wife, but we also know that the wedding ring is a visible and tangible symbol of the existence of legal and religious institutions that are a prerequisite for any form of marriage. As with the uniforms, wedding rings are visual signs not attributable to a single rule, but a more complex "institutional fact" articulated through legislation.
Where is the difference, then? In the knowledge that the sight of a wedding ring on a finger is not only indicative of the existence of a legally relevant fact: that sign also evokes a system of values identified by the bond of marriage. Loyalty and love for one's partner represent values that are not, and cannot be encoded by rules but which reveal an inevitable value-based dimension found in the "institutional facts." A wedding ring is an object loaded with pathos that has a certain symbolic value, an evocative power that opens up landscapes of values that are difficult to translate into rules in written or verbal form[9].
The same is true of national flags or ensigns. These are also "indicators" that belong to the language of law and possess an undeniable and necessary symbolic power. We need only think of the colours that represent a nation: the sense of belonging to a given community triggered by the sight of certain colours[10]. Furthermore, the idea of the homeland that does not coincide with that of the nation or other legal system, but rather involves a completely different dimension of values. Thus, it is no coincidence that one of the essays by legal historian Ernst H. Kantorowicz is vividly titled *Pro patria mori* (1951)[11].
The flag of the United States of America, for example, is full of symbolism. If the stars and stripes respectively indicate the number of states which increased up to the present number of 51 and the 13 founding colonies, the aesthetic value of the flag represents the fundamental values of the American people such as personal rights and freedoms granted by the Constitution and the Charter of rights.
More. There are flags that identify the values and the rights of universal and global communities. For example, the rainbow flag of the LGBTQI community designed by artist

9 On the irrelevance of ideal oughts, such as the duty to be loyal and loving, to rules, please refer to: Siniscalchi (2004, pp. 253-274).
10 The relevance of colours for legal discourse was recently underlined by Werner Gephart (2017).
11 See Kantorowicz (1951, pp. 472-492).

Gilbert Baker in 1978 and flown for the first time that same year in San Francisco displays the colours of the peace flag. It does not only assign different meanings to the coloured stripes, meanings such as health, life, sexuality. It is also the symbol of the fights for the rights of the gay and lesbian community in the entire world. The flag encloses and recalls a system of values which communities claim as universal rights. The symbolic force of the visual element awakens a sense of belonging and "affective participation" which, beyond statements or statues, perfectly expresses the sense of a community.
It is through shapes, and not words, that these signs construct immediately apparent legal worlds where even the aesthetic dimension testifies to an undeniable "morality of law". Wedding rings, flags, ensigns, to provide other examples, are all "status indicators" that not only reveal the presence of the legal system, but also speak of rights, values and expectations rooted in the collective conscience of a people, of a community or a nation, a right that lives and is handed down, beyond any particular historical purpose, through symbols and values.

5. Symbolic signs

There is more since some of these symbols are not only bearers of principles and values within the law, but help constitute the very foundation of its force.
The idea is not new: already in the seventeenth century Thomas Hobbes represented the strength and power of the State with an image. The famous frontispiece of his book *The Leviathan or the Matter, Forme and Power of a Common Wealth Ecclesiastical and Civil* (1651), designed by the baroque artist Abraham Bosse, symbolically represents the power of the hobbesian sovereign: the gigantic body of the king, organically constituted of the bodies of his subjects, which holds a sword and a crosier is the symbol of the concept of sovereign power introduced by Hobbes's work par excellence[12].
Without retracing the turning points in Kantorowicz's theory, I would like to dwell only on a visual sign that occupies a very important position in the reconstruction of his historical and philosophical investigation: the king's crown. In the famous book *The King's Two Bodies. A Study in Mediaeval Political Theology* (1957), Kantorowicz devotes the central part of his argumentation to the various meanings that the royal crown assumes in the constitutional and canonical jurisprudence of the Middle Ages, underlining the symbolic value of representing the unrepresentable, of making the invisible visible, of this particular sign.
Using Searle's lexicon, we could define it a "status indicator," even though the crown carries out a unique and unrepeatable function, at least according to the Anglo-Saxon jurisprudence from the sixteenth century investigated by Kantorowicz: it is a sign that "inscribes" the "mystical body", which is immortal, invisible, and the foundation of the sovereign's political and legal power, on the biological, mortal body. The sovereign thus has "two bodies" and the crown is the visual sign of this dual nature. Or rather, the crown is the tangible symbol of that legal and political power that is eternal and unchangeable and is passed from body to body, from sovereign to sovereign, without interruption and without regard for mortal and fleeting human affairs.
The symbol of the crown constitutes this "second" nature that characterises the figure of the sovereign and on which his legal power is based[13]. As Kantorowicz notes, in the lexicon of medieval political theology there are many signs where symbolic power establishes the very foundation of force of law: the crown is only the most important sign because, of course, represents and constitutes the origin of sovereign power[14].

12 A classic study on the frontispiece of the Leviathan is: Schmitt (1938). More recent: Bredekamp (2007, pp. 29-61); Bredekamp (2012); Siniscalchi (2017).
13 A recent re-reading of Kantorowicz that combines the aesthetic, political and legal dimensions can be found in: Agamben (2011).
14 When considering symbols of the dual nature of the body of the sovereign we must also remember the analogy

In more recent times, Pierre Legendre reintroduced the aesthetic, symbolic and visual element to the centre of reflection on the foundations of law. Again, I will not retrace the complex theoretical architecture constructed by the French jurist in his famous *Leçons* - I refer mainly to *Leçons VI. Les Enfants du Texte. Étude sur la fonction parentale des États* (1993) and *Leçons VII. Le désir politique de Dieu. Étude sur les montages de l'État du Droit* (1988) - but I will limit myself to explaining the link between visual symbols and the foundation of law.
According to Legendre, every device of political and legal power consists of a representation that depicts a "mythical third place," that is absolutely necessary to establish the law; an indescribable bond that cannot therefore be expressed in verbal form, and which is the "genealogical principle" of every legal and institutional phenomenon[15]; a *Référence fondatrice*, in Legendre's terms, which can only be represented symbolically, i.e. through visual signs, and which constitutes the "mysterious" origin of Western societies. For Legendre, inasmuch as it is symbolic, the visual is positioned as the very basis of law: every culture depicts this mythical bond by creating a fictional reality that rationalizes the indescribable nature of the foundation.
The particular visual sign (crowns, rings, flags, etc.) is of no significance, but what counts is rather the recognition that there is a symbolic link at the origin of every legal phenomenon, a fundamental image that has the task of showing what cannot be expressed with words.

6. The power of images

Therefore, not only is the dimension of visual rules and regulations necessary, the images can be constitutive of the entire legal phenomenon. The images allow us to rediscover new dimensions of the juridical discourse or guiltily neglected by law theory of the 20th century. The first one is the feature of universality of some visual norms which involves not only the juridical epistemology but also the perception of intrinsic ethical values of some signs and normative objects. The second one is the symbolic value of legal discourse that, from ancient medieval liturgies, projects law towards new global scenarios, beyond the text and the words of (post)modernity.

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between the crown and the halo.
15 In these pages I do not, of course, consider the fruitful relationship between images and the theatrical dimension of law as *mise-en-scène*. On this point, see: Garapon (2001); Amato (2017).

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VALERIA BUCCHETTI
Politecnico di Milano
valeria.bucchetti@polimi.it

FRANCESCA CASNATI
Politecnico di Milano
francesca.casnati@polimi.it

ICONS: NORMATIVITY AND GENDER INEQUALITIES

abstract

This contribution is aimed at offering a disciplinary viewpoint on the "rules without words" for the purpose of investigating "non-linguistic" normativity from the Communication Design perspective. The intention is therefore to examine how Communication Design shapes social reality through the creation or strengthening of social, normative and tacit rules. The focus of the observation are the non-linguistic expressions, rules, that contribute to the development or maintenance of gender-based social inequalities. Specifically, the observation concerns the forms of schematic representation which permeate everyday life and have an informative and prescriptive function, characterized by a high degree of objectivity and addressed to the whole community - both men and women. The contribution inserts itself within an international framework in which the importance of gender equality is central and reaffirmed by the ONU Agenda 2030 and the Resolution of the European Parliament 2018 (2017/2210(INI)).

keywords

communication design, tacit rules, gender divide

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1. The Role of Visual Configurations

The issue we wish to address concerns the role played by designed communication artifacts, which are employed in society to circulate information, data, goods, services, etc. It is these artifacts that we are going to observe in order to offer a disciplinary viewpoint on "rules without words" for the purpose of investigating so-called "non-linguistic" regulation.
The approach adopted is that of Communication Design, a discipline that "deals with giving form to content by working on the content itself and its representation methods as well as on the communication context in which it is conveyed" (Baule & Bucchetti, 2012, author's translation) and which forms the basis for the ideation and development of artifacts (Anceschi, 1992), visual systems and communication systems. This discipline, through design synthesis, "allows the transmission of content by 'embodying it' and thus making it available" (Baule & Bucchetti, 2012). This contribution is intended as a reflection on the way in which Communication Design, through its artifacts, models social reality by creating or reinforcing social, normative and tacit constraints.
To this end, we must start from an assumption, that "Communication Design has a permeating effect and is capable, though designed artifacts and systems, of guiding recipients' choices and behaviours, altering their perception of the reality in which they operate and contributing to the formation of viewpoints and opinions, to the point of taking on a role and function in sensitisation processes targeted at problems and issues." (Baule & Bucchetti, 2012, author's translation). It therefore exerts an action closely connected to the social role of individuals (Nissen, 2002).
Following these assumptions, the notion of *visual configuration* - a term referring to the organised visual forms and compositional structures at the basis of each visual communication artifact - is central to the discussion. These are configurations that constitute a system; a coherent and significant whole, capable of distinguishing itself through its qualities as a perceptual object within a densely populated flow of images. The idea, therefore, is to observe each communication artifact as a system, or a textual structure, in its semiotic sense. A structure, indeed, of varying complexity, composed of one or more visual configurations (Fontanille, 2008) that constitute the artifact's breakdown into forms and determine its expressive value, according to the rules and coordinates provided by the system itself and the relative context (Bucchetti, 2018).
Each "visual configuration" is therefore a text: the place where its signification materialises and manifests itself; that place, in other words, where two levels may be recognised and distinguished, belonging to each language, to each sign system: the level of the signifier and the level of the signified; the level of expression and the level of content.
Having delineated an initial perimeter for our discussion, we would like, then, to specify

our intended focus, namely the non-linguistic expressions (rules) that contribute to the development and maintenance of *social gender inequalities*.
In the "process of setting within the social landscape, discourse and language - in all their semantic dimensions - are load bearing (Federici & Leonardi, 2013). In particular if we consider the role played by these as amplifiers of social conventions on gender differences as well as behaviour and practice acquisition [relating to roles]" (Baule & Caratti, 2017).
The gender perspective, being a classifying concept, is therefore a key analytical category and, using this key, it is possible to make an observation of the relationships between women and men, taking gender, therefore, as a *descriptive axis* that allows the comprehension, in both diachronic and synchronic terms, of the conformation of male and female in a given society (Decataldo & Ruspini, 2014; Priulla, 2013).
The overall issue, of course, involves the media system in its globality and its various forms and, for this reason, it should be underlined that each configuration, each, "visual assertion", constitutes a building block in this "construction" of social representation.
Images portraying women, using representation methods, purposes or contexts distort their purpose and debase their dignity. We know the extent to which this universe of images places a crucial, delicate and, at the same time, urgent issue at the centre of the debate on the design disciplines, its pivotal point being the expressive synthesis of images.
While attention tends to be focused primarily on certain communicative events, such as advertising, for instance, which is considered a key topic being the arena for the solutions most markedly and explicitly detrimental to the development of an egalitarian society (*Resolution of the European Parliament,* April 2018 (2017/2210(INI)); Baule & Bucchetti, 2012), in this paper we have chosen to focus our attention on certain visual configurations somewhat removed from this. Indeed, we have chosen to observe *iconic forms* that correspond to *forms of schematic representation* (Anceschi, 1992; Frutiger, 1983); forms of pictographic representation which have a prescriptive and directing function, guiding people to "do the right thing", "in the right way", and which, themselves, are developed based on normative design principles.
If language proceeds by concepts and perception by objects then there is a border area "where these two ways of proceeding meet: the area of ideograms and cryptography or, in relation to our immediate concerns, of signage and graphic styling. [...] we realise at once that we are looking at that series of signals whose task is to transmit essential information to a large number of people who speak different languages but have common sociocultural traits and have received no training to aid them in deciphering these messages» (Massironi, 1982, author's translation).
We therefore wish to focus on iconic signs (Eco, 1973) which operate within contexts of information and signage (Burke & Eve, 2010; Massironi, 1982) or within systems of artifacts intended to convey instructions for use (Mijksenaar, 1999) and to assist us in our daily activities.

2. Pictographic Signs and Communication Systems for Everyday Use

Forms of iconic communication - the pictographic signs at the centre of our discussion, constructed in accordance with the rules of the theory of representation - function as "semantic chains that succeed in conveying particular and specific content and, within an economical communication, are not something other than or different to language but an aid to it; an amplification and a completion" (Massironi, 1982).
The reasons why we believe this specific category of artifacts to be of interest for the purposes of our discussion are determined by multiple factors as illustrated below.

- They are signs perceived in their immediacy and for which it is important to consider the intellectual operation that generates the link between the signifier and the signified.

- They are signs that are more useful the less they involve the need to learn decoding rules, and for which a code is established in order to construct a scaffolding of iconic meanings whose interpretative rules require no learning since they are found as in "diluted" form in the users' socioculture.
- We are dealing with a category of communication artifacts that, by nature, have a normative dimension since, at content level, they must transfer rules, instructions or orders.
- They are designed in a systemic perspective, that is, as a system of coherent signs that refers to a normalised system.
- They are aimed at an extremely broad target audience or, in many cases, at the entire community, embracing a concept of message universality since "[...] seeing is a specific instance of our collective theory of mind, vision is a commons, meaning a shared resource that we can nonetheless make use of in ways that also suit our individual needs" (Mirzoeff, 2015).
- They belong to a category of messages that are recognised as objective, do not revolve around persuasive rhetorical forms (persuasive and seductive rhetoric as seen, for example, in advertising) and are, in most cases, promoted by institutional agents or, in any case, with the intention of preventing and protecting. These are messages, therefore, aimed at citizens or users of a service and not at consumers to be persuaded. For this reason, too, they require a solid foundation of trust between sender and receiver, placing recipients in a position to listen through methods that do not give rise to defensiveness against the message on their part but, rather, a lowering of barriers. They are messages that have to do with tacit knowledge; with the apparently most obvious aspects of life: those that we think of and question least (Ghisleni, 2004) and that convey information which, to some degree, falls under the domain of common sense and all implicit knowledge of a given social and cultural setting.

This set of considerations, on one hand, reinforces the idea that we are reflecting on a category of signs whose main communicative function is of an informative nature, featuring a high level of "objectivity". At the same time, our phenomenological collection highlights the way in which this set of signs translates models that include behaviours, duties, responsibilities and expectations linked to female and male identity, the subject of social expectations, thus centring the discussion around those gender roles to which women and men are encouraged to conform.

In the design world, as Vitta (Vitta, 2016, author's translation) reminds us:

> [the] concept of norms enters into the very heart of objects, establishes their measure and value based not only on their technical effectiveness but also on the entire web that bonds them, to varying extents, to the existence of the subject, whoever this may be. The norms that govern them are the same ones that organise society: customs and rituals that revolve around objects' forms, distribution and, therefore, hidden meaning are often based on concealed and secret foundations on which only anthropological thought can shed a faint light. [...] The primitive roots of our being, its secret recesses in the conscious or subconscious mind and the hierarchies of behaviours imposed by society or the group constitute a tight web of rules that develop ceaselessly with the same imperious regulatory authority exerted by technical considerations.

It is precisely by starting from our repertoire of collected cases that we intend to observe this "web" and investigate how these organised visual forms, which have acquired a normative

quality, convey messages that affirm and reiterate an iniquitous and discriminating vision of society and the roles that women play in it, based on the principle of categorisation, thus revealing the distorsions inherent in a "neutral" system which is, in reality, heavily weighted and rife with inequalities.

3. Normativity and Dominance: A Field Observation

To categorise, as we know, "is to render discriminably different things equivalent, to group the objects and events and people around us into classes, and to respond to them in terms of their class membership rather than their uniqueness" (Bruner & Brown, 1956).
This categorisation forms the basis for the production of pictographic artifacts: "each image that contributes to forming a pictogram tends to take on the characteristics and transmit the sense of the entire category of objects to which the one in question belongs".
Normally, the image of an object has the quality of presenting that object in all its uniqueness, loaded, therefore, with those attributes that define it in its individuality. In pictograms, as Massironi (1982) reminds us, the opposite must occur: "the figure 'man' must represent all possible humans". However, if "each figure must represent 'the entire set of possible objects belonging to that class', the figure in question must no longer depict one object but the entire class of those objects. In other words, it is a concept".
We see, then, how pictographic representations of male and female figures give rise to denotative signs that refer, depending on the circumstances, to distinct classes not necessarily coherent with the denoted elements, within a vision closely connected to *male dominance* (Bourdieu, 1998), in which:

> the power of the male order stems from the fact that it is not required to justify itself: the anthropocentric vision imposes itself as neutral and has no need to engage in discussions aimed at legitimising it. The social order functions as a vast symbolic machine designed to ratify the male dominance on which it is founded (Bourdieu, 1998, author's translation).

Indeed, prescriptive communication artifacts, through their pictographic signs, reflect a norm - the choice of denotative signs - in which the universal masculine prevails, in contrast to signs that restrict representation of women to all those cases in which their femininity must be specified in order to meet specific conditions, presumed tasks and stereotypical inclinations.
Our reflection on the nature of pictographic artifacts originates, in part, from observation of the Italian public signage system and how this reflects the condition of inequality that characterises our society today.
Hence our decision to investigate the iconic representations that characterise our everyday environment; that setting "rich in signification" (Baule & Bucchetti, 2012) in which we live and whose images influence the construction of individual and collective biographies, indirectly affecting the construction of social identity. As Yazdani and Barker underline in *Iconic Communication*, "[...] pictographic icons, notionally transcend the barriers created by language differences. Pictorial icons do not necessarily transcend the barriers between cultures".
Assuming the critical viewpoint of designers, we therefore set ourselves the task of identifying and collecting those pictographic signs found in public and private environments that we habitually attend and that typify our routines: from public signage to other wayfinding systems, pictograms featured on product packing or instruction leaflets, focusing on icons depicting people.
This initial reconnaissance operation in the field enabled us to isolate and identify topics that led to specific in-depth studies intended, on one hand, to extend our base of iconographic

material and, on the other, to determine whether particular aspects observed in individual cases are recurrent or not.
Resuming our above-mentioned reference to "visual configuration" as text, it is interesting to note that Robustelli's reflection on verbal language appears equally applicable to visual language:
"Language makes it possible to codify thought and communicate judgements, opinions and expectations. The content and the very way in which the message is codified offer information on the conception of gender held by the person speaking - or, in our case, the designer - and can result in discrimination. Language respectful of gender differences constructs the message in such a way as to avoid its reading in terms of subordination or discrimination, through adoption of precise semantic or grammatical strategies, the former relating to the content and the latter to the use of the methods provided by the language system for recognising and specifying the existence of different genders" (Robustelli, 2015, author's translation).

4. The Universal Masculine and Pictographic Systems

In "*Pictograms, Icons & Signs - A guide to information graphics*" (Abdullah & Hübner, 2006), the authors stress the role of pictograms and the consequent need to be as independent of culture as possible: "Pictograms are used to warn, guide or protect and need to be immediately decipherable. They must get right to the heart of the matter by visually conveying a vital piece of information in such a way that it cannot be misunderstood, and they should therefore be internationally recognizable and independent of culture."
The observation work conducted (January-May 2019, Milan) was intended to uncover evidence of the link between pictographic representation and gender cultures. The results highlight an almost unavoidable tendency to reflect the culture and thinking of the designer - who grows up and is formed within a certain social group and with a particular culture - just as the verbal language and visual configurations studied reflect an historically placeable social situation, inevitably inducing judgements that "diminish, downsize and, ultimately, penalise the positions that women have, today, come to occupy" (Sabatini, 1987, author's translation).
The public environment was, as previously mentioned, the starting point for our observation. Signage is found in all public spaces, and generally consists of codes assimilated - or presumed to be so - by the collective. Starting with the pictographic language applied to the Italian road signage, a "neutral" system by definition since it is aimed at all citizens, both male and female, and an idealistically universal language, the first discrepancies emerge, highlighting the way in which the system is, actually, heavily weighted and loaded with implicit elements that contribute to reflecting and feeding an evident condition of gender inequality, as yet unresolved.
The prevalence of the male is clear and appears to coincide with the concept of neutral, used, in other words, when the message is addressed to the entire collective (*image 1*). The issue is accentuated by a minimal presence of figures with female characteristics who, as we will see below, appear to be linked predominantly to the sphere of mother/family or, more generally, to caring roles. The definition of "neutral masculine", drawing, once again, from the field of linguistics, indicates "uses of language that do not correspond to those of grammar but which attempt to justify themselves based on a misunderstood interpretation of sexual 'plurality'. Everyday language and the press reinforce the use of the masculine plural grammatical gender in its extensive and inclusive interpretation, in other words, to indicate male and female referents" (Robustelli, 2015).

[1] Examples from the Italian public signage system

The same occurs when a plurality of citizens is addressed through icons: figures with male characteristics are used if the message is addressed to both men and women, while, for specific cases (that is, when addressing limited groups), the figures may assume female characteristics, for example where in relation to a child and therefore in the role of mother, as seen, for example, in signage. The "unmarked masculine" is therefore identified with the bivalent function of the masculine gender, which refers both to males and to both sexes. There is also discussion of the "false neutrality" of the masculine when "what is only of man is passed off as universal" (Sabatini, 1987).

4.1 Hierarchies

In the previous section, we introduced the concept of the *neutral masculine*. If, however, we consider the numerically inferior cases in which female and male figures are co-represented, our attention is immediately drawn to hierarchical relationships and to those parameters that lead the beneficiary of the message to perceive, in varying degrees of consciousness, a subordinate relationship of women to men.

a) A Dimensional Relationship
The female figure is represented as dimensionally smaller than the male. One example is the "children crossing" danger sign (*image 2*), in which the little girl is depicted clearly smaller than the little boy, a difference which is emphasised by details that connote distinct age groups (such as the satchel carried by the boy and the lunch bag held by the girl). Similarly, in the sign specifically representing "elderly people crossing" (*image 3*), designed to be inclusive, we nonetheless find the same paradigm (the woman is portrayed as smaller than the man).

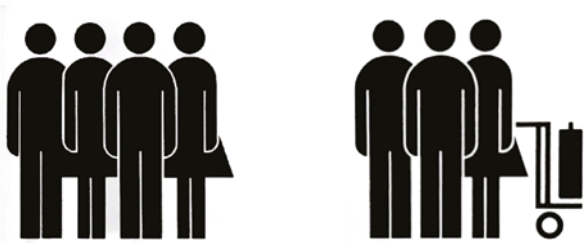
[2] *Children crossing* sign, Italian public signage system

[3] *Elderly people crossing* sign, United Kingdom

b) Topological Space
The female figure is perceived as "behind" the male. In the above-mentioned cases of the "children crossing" and "elderly people crossing" danger signs, for instance, the two figures are depicted respectively running and walking, and their positioning defines who is in front

and leading, thus assuming a role of power and responsibility (the little boy and the elderly man), and who is being led (the little girl and the elderly lady).
Another example is provided by the "lift" pictogram (*image 4*), part of the Italian public signage system. In this case, the *woman* icon is positioned in the centre, between two male figures, emphasising her need for protection, while the pictograms indicating "groups" and "groups with luggage" (designed for Zurich Airport's wayfinding system, *image 5*) use an icon representing the woman in the background, behind the male figure, due to a composition by *superimposition* in which the male pictogram is read perceptually as above the female one.

[4] *Lift* sign, Italian public signage system



[5] *Groups* and *Groups with luggage* signs, Zurich airport, Swiss

c) A Quantitative Relationship (in representation of groups)
The above examples (the Zurich Airport "groups with luggage" sign and the "lift" sign) raise another issue: that of quantification. In representation of groups, it is not unusual to find cases in which, despite both female and male citizens are being addressed, male figures have an unjustified prevalence.

d) Type of Action Performed
The question of the action represented and attributed to male and female figures brings us immediately back to the subject of the roles attributed respectively to these. This is a key issue since, as demonstrated by some of the cases cited ("children crossing" and "elderly people crossing"), the male figure assumes the role of leader - he who leads and, in some way, ensures the safety of the woman - and these are roles that deserve further exploration.

4.2 Roles

The final aspect investigated, and one closely interrelated to the observations made, is that of the roles that are attributed to women where the communication is not universal but intentionally targeted at a female audience. The premise that we undertook to verify concerns the fixed and limited nature of the roles attributed to women in the media, in which representation of the feminine world appears simplified, devoid of depth, ineffective or even damaging. With specific reference to the field of advertising,
"women have long since been the gregarious symbol of the desire and fantasy of men, essentially bodies with no story other than the one defined by male interest; by criteria of value and disvalue in force in the patriarchal symbolic order which absorbed the female into the male and offered subordination or parity as the only possibilities for existence" (Pallotta, 2012, author's translation).
This question brings into play fundamental and far-reaching problems, such as work-life balance, the so-called glass ceiling, professional inequalities, etc.

a) Female Roles
One of the cases that led us define and closely examine this category is a pictogram that

we consider emblematic. This pictogram is positioned on the shopping trolley of a major supermarket chain and represents a female figure in the act of pushing a trolley with a child seated inside it (*image 6*). The supermarket in question is Esselunga, whose wayfinding system uses a visual language very similar to that of public signage in which the neutral masculine is prevalent. The "need" of the issuer or designer to make the icon female therefore emerges precisely from the relationship between a *child* and the act of *shopping*. A relationship that "necessarily" includes a female figure: the task of caring for house and children falls to women. The mother/carer icon recurs in other cases of co-presence in pictograms representing children. One example is found in the signage used in stations, airports and shopping centres in the proximity of escalators (*image 8*). These signs normally send a series of "warning" or "danger" messages and, in all communications, the subjects are male, even if in groups or pairs, with the exception of the sign indicating that children must be accompanied by an adult, once again consigning women to the sphere of maternity and care, tasks attributed explicitly to them. The same occurs in some road signs positioned in proximity to pedestrian areas. These signs, part of the public signage system, show, in particular, pictograms of a man walking, the "children crossing" icon (with all the considerations indicated above) and a third icon that represents a female figure pushing a baby carriage.

[6] *Accompanying children on escalators*, Esselunga supermarket, Italy

[7] *Pedestrian area* sign, Italian public signage system

[8] Safety signs on escalators, Italian public signage system

Cases of signage featuring females also include those that use the colour pink to mark parking spaces reserved - as reported in a daily newspaper article about the creation of the first pink parking spaces in the municipality of Sesto San Giovanni - for "new mothers", with babies up to 18 months, taking for granted that the role of carer falls exclusively to the mother. These parking spaces are also signed, in other localities, through application of pictographic signs representing a female figure pushing a baby carriage (*image 9*).
This issue recurs in other settings; indeed, one need only think of the presence, still prevalent in Italy, of baby changing tables in women's public toilets but not in men's. The signage on the door is clear: in the majority of cases, it depicts a woman in the act of changing the baby. This does not occur in countries more sensitive to gender issues (such as the northern European countries, which top the ranking drawn up by the *Global Gender Gap Report*), where changing tables are present, together with the relative icon, in both toilets.
Returning to the shopping centre setting, when browsing the shelves of household products, it is immediately evident that laundry detergent and washing powder packaging, in particular, features female figures, alone or with children helping with the laundry or guilty of dirtying the clean clothes. Where usage or danger warnings are given, the figures depicted are once again female.
Another emblematic case is the icon that most laundry detergent packaging displays to encourage correct conduct, namely the message "keep out of reach of children" (*image 11*).

To convey this message, a little girl is pictured reaching up to take the product in question, which is positioned on a shelf above her. The child's action reaffirms that the product is aimed at female consumers (the symbol recurs, in a similar if not identical form, on other products of different brands) and implies the role that she will assume when she grows up. The little girl is depicted wearing a short dress, with pigtails and holding a doll, a key reference that symbolises learning of the care roles that we have seen to be the female domain.

[9] *Pink parking*, Avezzano, Italy

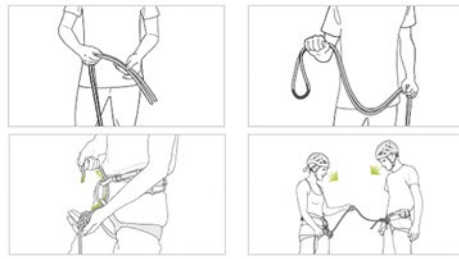
[10] *Changing baby room* sign, Italian public signage system

[11] *Keep out of reach of children*, laundry detergent package

b) Male Roles

Returning, for a moment, to the domestic cleaning product shelf, a single product stands out from the others due to the presence of male figures: a stain remover (a Nuncas product) which features some male silhouettes on the packaging (*image 12*). The point of interest, in this case, is the role attributed to the men. While women are depicted busy doing the laundry or, in some cases, as mere silhouettes, to emphasize the implicit target market in question, these men are portrayed as sporty. The product is called "Sportswear - penetrating, hygienic anti-odour action, especially for technical clothing", and the three outlines, with a relatively high level of detail, represent a skier, a cyclist and a runner engaged in their respective sports. The role attribution is accentuated by the very name of the product, which describes itself as "especially for technical clothing", and the male figures, as opposed to female figures, are not placed directly in relation to the domestic task of doing the laundry but rather to sporting activities.

[12] *Sportswear* package detail



[13] From *Petzl* instructions, climbing devices

More generally, if we observe *forms of schematic representation* and forms of pictographic representation that have a prescriptive function, aimed at guiding people to "do the right thing", and which are developed in sectors such as clothing and technical sports equipment, we can see that they are targeted at a male audience even when the product itself is not differentiated based on sex. One example of this is provided by unisex products such as climbing equipment (harnesses, safety devices, etc.) in which the images relating to usage

instructions (displayed on labels, tags, websites, etc.) predominantly feature male figures. The female figure is represented only when, on the subject of safety devices, the practice of performing a "partner check" is described, and her role is the passive one of "making safe" the man who, in contrast, plays the "active" role (*image 13*).
In the same way, if we were to perform a more detailed analysis of the forms of representation relating to "emergency instructions", displayed, for instance, in passenger aircraft, we would see that these reflect the phenomenon equally well. The cases presented here are structured according to a narrative sequence based on a visual language that is more illustrative than pictographic, and therefore more detailed and closer to the referent. In the three cases, the actions that must be carried out in the event of an emergency, during which passengers must play an active and collaborative role, are explained through a sequence of images.
In the first, used by the company Ryanair, the man has an active role (he is wearing an oxygen mask and life jacket and is operating the emergency exit) while the female figure is depicted in the passive act of sliding down the emergency slide. Another case that merits our attention is that of Lufthansa, in which the subject is a female flight attendant portrayed in the active role of assisting a boy in putting on his oxygen mask and life jacket but, again, the operation "requiring strength" - turning the handle to open the door - is carried out by a man. The female image reappears in the narration in order to show that children must be carried on the emergency slide, and therefore her task once again relates to caring for others. In the final case presented (SAS), the man is once again opening the door, assuming the role of hero and guardian, while the woman is depicted exclusively to draw attention to the requirement to remove high-heeled shoes before using the slide, thus also endowing her with a frivolous quality.

5. Non-Linguistic Rules and Design Challenges

The cases we have presented demonstrate the way in which visual configurations that correspond to forms of *pictographic representation* - whose task is to convey messages aimed in equal measure at female and male citizens - reflect, and implicitly feed, gender inequalities, with regard to both expression and content. The repertoire of signs collected highlights the extent to which each artifact form is permeated by what Melandri defines as "protection of masculinity's universal neutrality, capable of avoiding the unveiling of male partiality. The white, heterosexual, able man becomes the absolute signifier of the full and free social subject. He thinks of himself and is thought of as the 'only prototype of the human species'; he is the citizen *par excellence* while the others are 'minorities' " (Melandri, 2011, author's translation).
Linguistic structures, too (Violi, 1986), underline the extent to which man is used as a measure of things: in the Italian language, the masculine form is used as a universal neutral, disguising the divide between men and women and thus reproducing a social order (Toffanin, 2013; Giomi & Magaraggia, 2017), and the same occurs in semi-symbolic and figurative systems.
This is even more significant if we consider that an icon is "always a presentification of the represented, past and the future: temporal dynamics do not affect it, meaning that what is represented is always here and now, and inferences as to temporal attributes concern the cognitive interaction of the perceived data, not the immediate experience" (Massironi, 1982, author's translation).
We are, therefore, dealing with a designed repertoire in close relation to the 'aspects of the culture' of a society; aspects that, as Johan Galtung maintains, feed the elements that contribute to 'cultural violence'. It is a repertoire that directs our reflection to the close interweaving of artifactual devices and "tools that nourish gender violence" (Giomi & Magaraggia, 2017).
If it is true that the *schematic* visual language on which we are reflecting is not "something different to language" but rather an amplification of or a complement to it (Massironi, 1982), then the very content of the message provides information on the thinking of the designer,

who implements an interpretation process and, through *embodiment*, translates a "'certain idea' of *gender*". Hence the social responsibility role of designers, who must be aware of their design choices relating to form, content and communication structure; choices that "necessarily imply manipulative rules that guide sensitivities and orientations" (Baule & Bucchetti, 2012).

We may, then, assert that non-linguistic rules contribute to the maintenance and development of social inequalities and that, also on the basis of this field of study, a challenge has emerged for the design disciplines: thanks to the approach introduced by gender research (Decataldo & Ruspini, 2014), these disciplines may now reorient their own areas of research and design experimentation, thus contributing to the promotion of non-linguistic rules in order to further the 'social good'.

This observation of ours must, therefore, be placed at the centre of a design challenge and a disciplinary reflection whose focus is on the "construction" of sign systems that organise society. To design communication artifacts that are fair and respectful of gender differences is to adopt a critical gaze permitting formulation of the message "in such a way as to avoid its reading in terms of subordination or discrimination" (Robustelli, 2015, author's translation). A message capable of expressing a condition of equality and, in the long term, promoting the social good through representation methods that reflect the plurality of the recipients to whom they are addressed.

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SECTION 3

SECTION 3

OUTSIDE THE HUMAN SOCIAL WORLD

LAURA DANÓN
National University of Córdoba
ldanon@unc.edu.ar

ANIMAL NORMATIVITY

abstract

Many philosophers think that human animals are the only normative creatures. In this paper, I will not provide reasons against such a claim, but I will engage in a related task: delineating and comparing two deflationary accounts of what non-human animal normativity could consist in. One of them is based on Hannah Ginsborg's notion of primitive normativity and the other on my conjecture that some creatures may have first-order robust "ought-thoughts", composed by secondary representations about how things should be or about how one should act. Once I have sketched both models, I will focus on identifying some cognitive differences between creatures merely having primitive normativity and those also having robust ought-thoughts. Finally, I will draw a few tentative remarks on the kind of empirical evidence that would suggest that an animal has one or another of these two kinds of normativity.

keywords

primitive normativity, ought-thoughts, secondary representations, animal minds

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1. Introduction

Human beings are normative creatures. We follow practical norms that give us reasons to act in certain ways, social norms that regulate how individuals must act as part of a social group, moral norms that guide the morally required behavior or the correct moral judgements, etc. We also have a capacity to display robust responsiveness to (and an understanding of) norms, as well as a capacity to assess our behavior, and that of others, through a normative lens. Based on these facts, Lorini (2018) has characterized humans as "nomic animals", i.e., animals capable of acting in light of norms. Giovani Conte (2000), in turn, introduces the term "nomotropism" to refer to this capacity that human agents display to orient themselves according to norms.[1]

There is also a widespread consensus that humans are the only normative animals (Brandom, 1994; Korsgaard, 2006; McDowell, 1994; Schmidt & Rakoczy, 2019). However, several recent dissenting voices have defended that some non-human animals can actively respond to norms and even have some understanding of them. Philosophers within this group usually focus on moral norms and moral agency (Bekoff & Pierce, 2009; de Waal, 2014; Rowlands, 2012; Rudolf von Rohr *et al.,* 2011). Nevertheless, Vincent, Ring & Andrews (2019) and Lorini (2018) have suggested a different methodological approach to the problem of animal normativity. They urge us to step back from the debate on whether non-human animals follow moral norms to focus – at least temporarily— on the broader issue of whether some animals have a general capacity to act in light of norms. Following their lead, in this paper I will focus on examining and comparing two deflated accounts of normativity that might be better suited to be extended to non-human animals than other orthodox accounts.

This is the structure of the paper: I will begin by presenting a highly intellectualist model of normativity that I will call *the reflexive model.* According to it, normative creatures must have an explicit grasp of norms *as such,* as well as a capacity to reflect on whether their actions or their motives conform to them (Section 2). This demanding approach does not seem to be a good option for those interested in crediting non-linguistic animals with any capacity to respond to norms and display normative behaviors. But this is not the only possible way of

1 Interestingly, the capacity to act in light of norms may include more than being able to act in ways that conform to them. It can also include the capacity to guide one's behavior according to norms even when one is not actually following them but, for example, trying to break them without suffering the consequences, circumventing them, etc. See Lorini (2018) and Conte (2000).

thinking about such abilities. In Section 3, I will briefly delineate a minimalistic alternative, based on the notion of "primitive normativity" (Ginsborg 2011a; 2011b). In addition to this, in Section 4, I would like to propose a different deflationary account of normativity, based on the notion of "robust ought-thoughts", showing why it is more demanding than primitive normativity but less exigent than the reflective model. This paper's main aim will be, then, to compare and discuss these two deflationary models of what non–linguistic animal normativity could consist in: the "primitive normativity model" and the "robust ought-thoughts model". In each case, I will briefly examine the cognitive differences between creatures having primitive normativity and those having robust ought-thoughts. Based on them, I will draw a few general remarks on the kind of animal behavior that seems to be easily explainable in terms of primitive normativity and the kind of empirical evidence that would suggest, instead, that an animal has robust ought-thoughts.[2] Admittedly, a more detailed analysis of relevant empirical evidence would be needed to conclude that any of these deflationary models can be fruitfully extended to the behavior of non-human species. I will leave such a task for a future occasion. My only aim here is to roughly examine and contrast some theoretical alternatives that those interested in the problem of animal normativity may end up finding explanatory useful.

2. The reflexive model

According to a long Kantian tradition, nomic animals do not only act because they have some psychological motives to do so. Rather, they can also act in a certain way because the abide by a norm. Now, how should such a capacity to act in response to a norm be understood? This is how advocates of this model will likely respond: for an agent's action A to be a case of responsiveness to a norm, she must represent the norm, acknowledge its legitimacy, correctly infer (or somehow recognize) A as the action prescribed by it and, finally, do A, because it is the behavior that the norm prescribes (Okrent, 2018).

Korsgaard (2006) proposes a slightly different version of this account. According to her view, normative creatures do not merely act guided by their psychological motives but, rather, they are capable of gaining control over their impulses by inspecting them and judging whether there are good reasons in their favor. Moreover, such a capacity is what distinguishes humans from other animals. In fact, using a term coined by Harry Frankfurt, Korsgaard claims that non-human animals are mere "wanton": they just act on their uppermost instinct, desire or emotion. Human animals, on the contrary, have a capacity for normative self-government that allows them to adopt a reflexive distance from their motives and ask themselves whether they should follow them or not.

In brief, according to the reflexive model, normative creatures must be capable of: i) explicitly thinking about norms as such and ii) taking norms as objects of further thoughts (in order, for example, to consider them as legitimate and to assess whether their behavior conforms to them or not). Additionally, in Korsgaard version, they must be able to: iii) have second-order thoughts about the adequacy of some of their motivational states in light of those norms. Then, these creatures must not only be capable of making normative judgements about the world or their actions. They must also be capable of making similar judgements about their motivational states and the grounds that they have to follow them (or not).

It seems difficult to extend such a restrictive view of normativity to non-human animals.[3]

2 Even though I think that these are general models that one may apply to explain different kinds of nomic behavior in non-human animals, my brief discussion of empirical examples will focus on behavior suggesting a capacity to act in light of social norms. A more encompassing treatment of these issues should include how these two deflationary models could be extended to evidence suggesting responsiveness to other types of norms.

3 Even if one is not interested in the issue of animal normativity, it is possible to find compelling criticisms against such models in Kornblith (2012) and Rowlands (2012).

After all, it is highly controversial whether there are non-human animals that have second-order thoughts or reflective capacities (Bermúdez, 2003; Rowlands & Monsó, 2017), and even those philosophers and scientists who think that humans are not the exclusive possessors of such capacities are only willing to attribute some of them to a few non-human species. However, there are other less demanding conceptions of normativity. The next two sections will be dedicated to exploring two deflationary alternatives of this sort.

3. The model of primitive normativity

Let us turn, then, to the two deflationary models of normativity that I will be interested in discussing and comparing. A central notion in the reconstruction of such models is that of "implicit norms". Implicit norms play a key role amongst those interested in defending minimalistic accounts of normativity (Andrews, 2014) and attributing at least a basic capacity to understand and follow norms to (some) non-linguistic animals (Bekoff & Pierce, 2009). However, the notion of implicitness that is associated with norms in these debates can be interpreted in several ways. According to one use of the notion, something is implicit when it is unarticulated or not verbalized (Brownstein, 2018). Since animals lack language, it is clear that, if they have some understanding of norms, it will be implicit in this sense. There are, nevertheless, other ways of understanding implicitness that are relevant to our discussion. One may think, for example, that those creatures that merely have a non-representational capacity to discriminate behaviors conforming to a norm from those deviating from it have an implicit understanding of this norm. After all, they lack any explicit representation – whether articulated in a public language or mentally represented– of the norm's content.

In this vein, Hannah Ginsborg (2011a; 2011b) has coined the notion of "primitive normativity" to refer to a kind of normativity that does not depend on conformity to an antecedently recognized rule or norm. According to Ginsborg, this basic kind of normativity consists in an awareness of the appropriateness of a response to a specific context that does not depend on the antecedent grasp of a rule or norm determining that response as correct rather than incorrect. The creature endowed with this kind of normativity has a minimal understanding of what is appropriate to do, without needing neither to explicitly represent the norm that guides her action nor to put it into words.

Ginsborg explicitly attributes this kind of normativity to human infants. She invites us to imagine that a child who has not yet mastered color concepts learns, by following the example of an adult, how to sort green objects in one pile and blue objects in another pile. It does not seem adequate to attribute to this child the capacity to grasp a rule like *place all the blue objects in one pile and the red objects in another,* since, by hypothesis, she lacks at least some key concepts – color concepts— that are constitutive components of the rule's content. However, it would not be adequate either to describe her as being merely *caused* by the blue and red objects to sort them in two piles. Rather, it seems that "a normative claim is embedded in her behavior" (Brownstein, 2018). The child has learned, by her previous interactions with the adult, how to act. She is motivated to act in such a way and she experiences the appropriateness of it. She is aware that the blue objects "fit" in one pile while the red objects "fit" in a different one. Furthermore, the child would probably become upset if she found out that she had mistakenly left a red object in the blue pile and would experience the inappropriateness of her response.

Kristin Andrews and colleagues have given their own twist to the notion of primitive normativity in order to extend it to non-human animals (Andrews, 2014; Sultanescu & Andrews, 2013; Vincent, Ring & Andrews, 2019). Basically, they add a social dimension to Ginsborg's proposal. In their view, animals that have primitive normativity must be capable of distinguishing in-group from out-group members, and they must have a sense of *how we do things around here* that does not depend on grasping and conforming to antecedently recognized norms or rules.

One may wonder, at this point, whether we should credit creatures that have this kind of primitive normativity with any kind of normative thoughts. Ginsborg herself seems to think that these creatures need to be capable of entertaining *some* thoughts about their actions, with contents like *this is appropriate*, *this fits*, or *this belongs*. These contents seem to be part of the "sense of appropriateness" that accompanies their actions. Moreover, she claims that to have such contents, they must also have "the capacity to entertain a concept of normative fit, which we might label as the concept *ought* or *appropriate"* (Ginsborg, 2011a, p. 252).

What follows from Ginsborg's characterization of primitive normativity, however, is that such contents do not represent an explicit general norm. Rather, they only involve the attribution of a property like fitting, belonging, etc., to the response that the creature is currently giving (like "*this is appropriate"* or *"this fits").*

It could be argued that, since the creature is conscious of her response being appropriate to a context, she also has to represent that context which, as Ginsborg suggests, will occasionally include her preceding responses in similar circumstances (cf. Ginsborg 2011a p. 241 and p. 244). Now, even if this were the case, the creature endowed with this primitive kind of normativity would only have to represent two things: i) how she has acted in the past and ii) whether her current responses are appropriate or not (given these past responses). Yet, she would not need to have a general and explicit representation of how one should act, or about how things ought to be, different from her representations of how things are.[4] Arguably, then, having primitive normative thoughts requires, at most, only a very limited capacity to normatively asses what is happening in the thinker's "here-and-now". After all, primitive normative contents only need to refer to what their owners are currently doing (or to the behaviors that they are observing in others). Creatures having these thoughts may, then, be incapable of anticipating what ought to be the case in the future, in a counterfactual situation, etc. They do not need such fancier abilities in order to apply their primitive concept of "being appropriate" to what they are presently experiencing.[5]

The notion of primitive normativity may be useful to account for some intriguing examples of animal behavior. Still, assessing its explanatory value is a complex task that requires establishing what kind of non-linguistic behavior would indicate that an animal has this kind of normativity and giving reasons to think that such behavior cannot be better explained in non-normative terms. Providing these criteria and reasons exceeds the scope of this paper. However, I would like to finish this section by presenting one illustrative example of a behavioral pattern that seems, at least initially, to be nicely explained by primitive normativity.

Several primatologists have defended that chimpanzees have proto-social norms regarding the treatment of infants. As they report, infants are usually given deferential treatment by adult members of chimpanzees' communities. They are allowed to jump over adults, to steal food or tools from them, etc. Moreover, when an adult chimpanzee behaves in an aggressive way towards an infant, this usually leads to an uproar of protest by adult females and can even cause some third-party intervention (de Waal, 1996; Rudolf von Rohr *et al.,* 2011; 2015). This kind of non-verbal evidence is considered to be particularly revealing because it involves the reaction

4 Besides, as mentioned above, creatures having these contents may lack the appropriate concepts to categorize the actions that they sense as appropriate. That is why, one may conjecture, we find demonstrative expressions referring to those actions in the linguistic articulation of such contents (e.g., "this fist" or "this belongs").

5 Similar considerations apply to Andrews and colleagues' understanding of primitive normativity. Even though they give the notion a social twist, creatures with this kind of normative sensitivity only need to have contents referring to particular present actions: those that "we" do around here. But they do not need to be capable of thinking about how their group ought to behave in counterfactual situations, what they ought to have done in the past, etc.

of uninvolved bystanders. Consequently, it can be excluded "that the reactions in question are simple responses to the violation of individual interests but rather are based on more generalized expectations about 'how one ought to behave'" (Rudolf von Rohr *et al.,* 2011, p. 3). Now, arguably, chimpanzees need not have in mind a general normative content such as "one must not hurt infants", to react as they do. Alternatively, they may have acquired, by previous experiences, the disposition to respond to aggression towards infants with an awareness of its inappropriateness. Such a primitive sense of what is appropriate or not seems sufficient to explain their reactions. Although I will not be able to do so here, I think that one may provide similar accounts of other behavioral patterns that animals display in social contexts, such as the disposition of some species of non-human primates to break fights amongst others, their protests against unequal divisions of goods, etc. (de Waal, 2014). Once again, a primitive capacity to be aware of the appropriateness/inappropriateness of some particular actions (performed by them or by others) may be all that is needed to account for such evidence.

4. Multiple models, secondary representations, and robust "ought thoughts"

In this section, I will propose an alternative model of responsiveness to norms that is more demanding than the one based on primitive normativity, yet less stringent than the reflexive model. Let us begin by returning to the explicitness or implicitness of norms. According to a widespread way of understanding explicitness, something— a thought, a feeling, a content— is explicit when its owner is aware of it (Brownstein, 2018). Furthermore, it is usually claimed that such awareness of a thought, a content, etc., requires reflexively turning towards those mental entities and transforming them into the objects of second-order thoughts. Extending these ideas to norms, the advocates of the reflexive model claim that nomic creatures must have mental representations of the norms that they follow (Okrent, 2018), and they must be capable of taking such representations of norms as objects of further thoughts in order to evaluate whether their actions, or their motivational states, accord with them or not.
Imagine now, on the contrary, that some creatures lack both the concept of norms and second-order thoughts about their motivational states. They are neither capable of explicitly thinking about their representations *of norms as norms*, nor of acknowledging them as legitimate or illegitimate, assessing whether their motivational states, or their actions, accord with those norms, etc. There is a sense in which their understanding of norms, if they have any, must be implicit. What I would like to suggest here is that these creatures may still have some explicit representations of how one ought to behave in different situations, such as: "one ought not to hurt an infant", "one ought to defend one's kin", etc. Moreover, they may also have a practical capacity to use such representations to guide their behavior, even if they are not capable of explicitly thinking about them *as norms*. From now onwards, I will refer to those mental states that explicitly represent how things ought to be as "robust ought-thoughts".
Even if they do not involve the capacity to have second-order thoughts, or to reflect about norms as such, "robust ought-thoughts" still impose some substantive cognitive requirements. In order to think about what ought to be the case, a creature must be capable of representing more than what is actually present. In this sense, having ought-thoughts is similar to thinking about how things could be, how they will be, or how they were. What all these thoughts have in common is that they involve an ability to detach oneself from what is happening in the immediate environment. Thus, creatures that have robust ought-thoughts must possess quite sophisticated abilities to represent what is not actually the case, but ought to be.[6]

6 One may find a similar suggestion in Vincent, Ring and Andrews (2019). According to them, an ought-thought: "...is a cognitive modality much like mental time travel or counterfactual thinking. Thinking about what ought to be

To better understand the cognitive capacities involved in having robust ought-thoughts, I will focus on the influential account of the evolution of human infants' representational capacities developed by Josep Perner. According to Perner (1991), during the first two years of their lives, infants only have one model of reality composed by primary representations whose main function is to represent how the world is. By the time they turn two, however, they acquire secondary representations "decoupled" from reality— i.e., children do not confuse them with their primary representations of how things actually are. Secondary representations allow them to entertain multiple offline models with different functions: representing how things were in the past, how things will be in the future, how things could be in a counterfactual situation, etc. In this sense, they free them to think beyond what they have perceptually experienced. Finally, the acquisition of secondary representations enables the emergence of a host of abilities, such as the capacity to understand hidden displacements, means-ends reasoning, pretense, empathy, some basic capacities to interpret external representations, mirror self-recognition, etc.

Perner thinks, however, that, at this stage, children do not have yet the more sophisticated capacity to meta-represent or to represent representations as representations. They treat their different models of reality as different kinds of "situations" – past situations, future situations, as-if situations, etc., — but they do not explicitly understand them as representational models. They will not acquire meta-representational capacities until they are three or even four years old.

Suddendorf and Whiten have extrapolated Perner's distinctions to debates in animal cognition, arguing that we have good evidence that great apes have secondary representations that allow them to display a range of remarkable skills, similar to those of two-year-old infants, in tasks like mirror self-recognition, understanding hidden displacements, pretense, empathic behavior, interpreting pictorial representations, etc., (Suddendorf, 1998; Suddendorf & Whiten, 2001).[7] As Suddendorf and Whiten (2001) admit, we should not expect different species of animals to deploy secondary representations exactly in the same realms as humans or in the same ways as humans. That being said, I would like to suggest that some animals lacking meta-representational skills may still have a specific kind of secondary representations allowing them to represent how things *ought to be*. These "robust ought-thoughts" should be understood as explicit first-order representations about non-actual ideal situations. Since they are about what is not actually the case, it is possible for the thinkers of such thoughts to use them as models or standards of correctness, allowing them to normatively guide their current actions by contrasting what they actually do with what they should be doing or how things actually are with how they should be. However, if ought-thoughts are to function as normative standards, they must have some additional features. Let me roughly present some of them.

The first thing to point out is that ought-thoughts are supposed to have the same kind of general deontic contents that norms have and, presumably, it must be possible to use them, just as norms are used, to guide our behavior. But, if this is so, these mental states should

the case –like thinking about what happened in the past, what might happen in the future, and what might be the case under various circumstances— is a cognitive mode that requires the thinker to do more than represent what is currently the case" (pp. 58-59).

Although I find this passage illuminating, it is hard to reconcile it with the notion of primitive normativity that they defend. In line with my previous arguments, I do not think that the demanding ought-thoughts that they are referring to in this quote are needed for primitive normativity, but I do think that they are required for the more robust type of normativity that I sketch in this section.

7 As Suddendorf and Whiten (2001) remark, there is also some evidence suggesting that other animals, like dolphins, dogs, parrots and monkeys, may also have secondary representations.

share at least some key features with norms. One of them is the agent-independent or general character of norms (Christen & Glock, 2012; Rakoczy, 2015; Roughley 2019; Schmidt & Rakoczy 2019). A norm prescribing that one ought not to hurt children, for example, is a general standard that applies to any agent in equivalent circumstances. It can be argued that the contents of ought-thoughts will have to be general and agent-independent as well, representing not only how the thinker ought to behave, but, also, how others in equivalent circumstances must do it. Consequently, thinking such contents will involve having some expectations on the behavior of others and, probably, manifesting that these expectations are unfulfilled when one finds out that the others do not behave as they ought. All this goes well with the idea that one kind of privileged evidence to focus on, when studying animal normativity, are behaviors suggesting that animals react in a negative way when some group norms are violated (Christen & Glock, 2012; Mertens, 2019; Rudolf von Rohr, *et al.* 2011; 2015).
Another key feature of norms is their *normative force* (Rakoczy, 2015; Rowlands, 2012; Schmidt & Rackozy, 2019). Norms exert a "normative grip" on us; they require or demand actions of a certain kind in certain contexts (Roughley, 2019). However, at the same time, it is always possible to violate them. Once again, to function as action-guiding norms do, ought-thoughts should share those features, *binding* the thinkers to act in a certain way (even though it must be also possible for them to act otherwise). Ought-thoughts must, then, motivate their owners to act in such a way as to satisfy their contents. In this sense, it can be claimed that, like other motivational states, ought-thoughts must have a world-to-mind direction of fit: when things are not as they represent them, it is the world the one that should be changed, not the thoughts' contents (Cristhen & Glock 2012; Searle, 2004).
Finally, some philosophers credit norms with an additional property: they must give agents reasons to act in certain ways that are independent of their particular interests and desires (Korsgaard, 2006). Arguably, ought-thoughts must also share this feature. Thus, creatures that have ought-thoughts should sometimes face a conflict between these thoughts and their desires or interests. They must also be capable of acting as their ought-thoughts indicate, even when their desires or preferences do not motivate them to do so. They must be capable, for example, of acting in a specific way A, despite not having any individual desire or interest to do A, just because they think that is what they ought to do; they must be capable of refraining from acting as they desire because their ought-thoughts prescribe not to act in such a way, etc.
If these considerations are correct, having robust ought-thoughts amounts to having representations of the content of norms that can be used to guide and evaluate behavior.
Now, it seems that if ought-thoughts are to guide a creature's behavior, she must treat them as norms. However, *treating* some contents as norms is not the same as reflexively *thinking* about them as norms. The former is a practical capacity to be guided by how one thinks that things ought to be, which requires putting to use two different kinds of first-order thoughts (i.e., thoughts about how things are and thoughts about how they should be). But it does not require a meta-representational ability to think about our motives as motives and to judge whether we should follow them or not. Neither does it require taking our representations of norms as objects of second-order thoughts in order to acknowledge them as norms, to explicitly judge whether our actions accord with them, etc. In a sense, then, the kind of normativity that comes tied to putting to use ought-thoughts is not as demanding as the one described by the reflexive model.
At this point, one may ask: where does the difference lie between creatures having only primitive normativity and creatures having robust ought-thoughts? Let me give a rough answer to this question. As seen above, creatures that merely have a capacity for "primitive normativity" only need to be able to represent some actual responses as "appropriate" or "fitting" in light of their previous responses. Thus, they may be only capable of representing

what they are currently experiencing or have experienced in the past, and they need only be capable of normatively reacting to their representations of how things are right here and now. In contrast, creatures that can think robust ought-thoughts must also be capable of representing non-actual ideal situations and of using such representations as general standards to guide their behavior.

Now, it seems to me that having such decoupled models or standards makes a host of new capacities and responses possible. Let me suggest here just a few examples:

a) *Inventing new normative responses*: Having robust ought-thoughts allows a creature to imagine or invent different kinds of responses, and to think of them as the responses that ought to be given in certain contexts. Afterwards, she may use these representations as standards to guide her behavior when actually trying to perform these new actions, or when evaluating the performance of others. Imagine, for example, that a kid invents a new game and stipulates that several innovative responses constitute different "moves" in that game. It seems to me that when, later on, she tries to play the game with others, she will need to have (at least) some robust of ought-thoughts representing those actions as the "correct moves" and use them to guide her responses, and to evaluate those of others.
b) *Performing complex instrumental actions*: It has been argued that to perform complex instrumental actions, it is necessary to have:
   i) a goal state representing how things ought to be;
   ii) the capacity to mentally manipulate the components of the present situation so that they match the goal state and the ability to identify those sequences of actions that can take us from the present situation to the ideal one;
   iii) the capacity to enact the identified sequences of actions.
c) *Interpreting external representations as models of how things should be*. Creatures with robust ought-thoughts should be able to use them to interpret external representations — pictures, maps, scale models, etc., — not as representations of how things are, but as representations of how they ought to be. Then, they may use these external devices to guide their actions with the purpose of changing their environments so that they approximate the represented ideal situation. The small kid following a Lego blueprint seems to be in command of this kind of ability.

What this cursory enumeration suggests is that creatures with robust ought-thoughts are not merely aware of the appropriateness/inappropriateness of present responses: they can also represent ideal situations that they have not previously experienced, compare what is happening with what should happen, think about how to change a current situation so that it approximates an ideal one, etc. Then, it seems that, if we are interested in attributing robust ought-thoughts to non-human animals, we need to move beyond evidence showing that they can give normative responses to particular present behaviors. What we should look for, instead, is evidence suggesting that they have general representations about how things ought to be, or how agents ought to behave, in different times, contexts, etc. Now, it seems likely that animals having such general representations should be able not only to assess their current behavior (or that of other creatures) as appropriate or inappropriate, etc., but to have normative expectations about how they, or others, must act in the future, how they, or others, should have acted in the past, in counterfactual situations, etc.

But, do we have evidence of the existence of such normative expectations about the past, future or counterfactual behaviors? There is no clear answer to this question. There is some observational evidence of animals that seem to punish others for things that they have done in the past. De Waal (1996), for example, tells the anecdote of two adolescent female chimpanzees who one night refused to return to their sleeping quarters at Arnhem Zoo. Now, the rule at the zoo was that no chimpanzee would receive food until all of them had entered the building,

and hungry chimpanzees usually showed hostility to latecomers. That night, the adolescent chimps were given a separate room to prevent reprisals. However, the next morning, the whole colony chased them and aggressively bit them, presumably, in reprisal for their past behavior.

Arguably, such a delayed "punishment" cannot be easily explained in terms of a primitive normative awareness of the inappropriateness of adolescents' actions, since they took place in the past. At least in principle, it seems easier to explain "delayed punishment" if we credit the chimps with a general representation about how everyone ought to enter the building on time at night, or something like it, that they can compare with what actually happened, in order to conclude that the latecomers behaved badly and have to be punished. One may also attempt to explain, along these lines, other evidence of dogs refusing to play with other dogs that have "cheated" in the past by being aggressive to them during playful interactions (Bekoff and Peirce 2009) and of chimpanzees delayed retaliation after aggressive encounters with others (de Waal and Lutrell, 1988). However, the available data is admittedly quite scarce and it is possible to think of less demanding ways of explaining it.[8]

Another (to my mind more promising) strategy would consist in looking for evidence that non-human animals can succeed in the kind of complex tasks mentioned in a)-c) – i.e., complex planning, the use of external representations as models or standards, the invention of new rules or normative practices, etc. The problem, of course, is that we seem to lack such evidence. We have some impressive evidence of long-term planning in the animal kingdom, especially in great apes (Mulcahy & Call, 2006; Osvath, 2009), corvids (Raby *et al.,* 2007) and monkeys (Bourjade *et al.,* 2012). But we still need to examine it carefully and, probably, run complementary studies, to establish whether such planning involves not only secondary representations but, more specifically, thoughts about how things ought to be or how one ought to behave. Similarly, some studies indicate that some chimpanzees can use scale models and photographs as sources of information about their referents. They can, for example, use the information provided by such external representations to locate hidden objects in a room (Kuhlmeier, Boysen & Mukobi, 1999). Yet, this only shows that chimps can use external representations as models of how things are. What we would need is evidence that they can use external representations as models of how things ought to be.[9] This would be the case, for example, if these animals could use maps not to find out the actual location of things, but, rather, to represent where they should put them in a room.

To sum up, it seems that if we want to credit non-human animals with robust ought-thoughts, we need to obtain a kind of evidence that is still scarce or lacking. Discussing the notion and comparing it with other ways of understanding animal normativity might be of help, however, to guide future empirical research. More generally, it appears that there is also a lot of philosophical and scientific work to do in order to establish whether we should attribute *any* normative responsiveness to non-human animals, and how this responsiveness should be understood in each case. Here, I have limited myself to sketching two alternative models on how to think about animal normativity that need to be further discussed, both theoretically and empirically.

8 One may think, for example, that when some animals misbehave, they are immediately "marked" or "categorized" by others, who find their current behavior "inappropriate", as animals that one should attack, avoid playing with, etc. This categorization is what will cause their negative reactions towards them later on. If this were the case, no comparison of their past-behaviors with an independent robust ought-thought would be needed to explain the evidence under discussion.

9 Once again, using something as a model (of an ideal situation) is different from representing it as a model. The former involves only a practical capacity to use the information about an ideal situation that the model provides in order to guide ones' behavior. The latter involves explicitly representing the model as a model.

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CARLO BURELLI
Università del Piemonte Orientale
carlo.burelli@uniupo.it

NORMS FROM NATURE ETIOLOGICAL FUNCTIONS AS NORMATIVE STANDARDS[1]

abstract

When we say that the function of a knife is cutting, we open the door to evaluating knives based on how well they cut. The aim of the paper is to investigate whether functions ground normative standards. This is an exciting question, as it would highlight the important existence of one instance of non-moral normativity and investigate to what degree it involves a trade off with it. Additionally, insofar as it depends on a naturalistic account of functions, functional normativity may be an obvious candidate of non-linguistic normativity that the special issue aims to investigate. The article will first investigate what functions are, providing an etiological account that explains functional attributions for artefacts, as well as biological and social functions. It then discusses how failing to discharge a function results in malfunctioning, not in losing the function. Finally, it argues that functions so understood provide normative standards, independent of moral norms.

keywords

functions, functionalism, normativity, nature, morality, evolution

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Introduction

There are many kinds of norms. Alongside the usual moral normativity, many authors identify epistemic normativity, prudential normativity, aim-given normativity or aesthetic normativity as distinct domains (Maynard and Worsnip 2018, 756). This paper aims to defend the view that naturalized etiological functions, in human artefacts and biological and social contexts, ground normative standards independent of and sometime conflicting with moral norms.

Since the earliest teleological outlooks, it has been difficult to reconcile the notion of function with an entirely naturalized view of the world. Functions are not merely descriptive properties of the world, because we attribute them to entities that do not empirically exhibit a specific behaviour. If someone becomes blind, for example, his eyes retain the function of seeing, even if they cannot descriptively perform it. As such, it has been difficult to square our intuitive understanding of functions with an entirely scientific and value-free understanding of the natural world.

Matching the topic of this special issue, functions can instead be understood as non-linguistic norms, emerging from nature. If the etiological account is correct, we might talk about a good eye as an eye that sees well, even if there is no human agent articulating such a point linguistically. Indeed, some etiological accounts argue that some properties count as natural functions, present in the world independently of whether there are human agents present to attribute the function.

In this paper, I first introduce the so-called etiological account, which offers a persuasive explanation of what functions are, and why they can be found not only in human artefacts, but also in biological organisms and in the social world. Although some epistemological skepticism towards this notion is common, particularly in the context of the social sciences, etiological accounts can provide a solid conceptualization.

Secondly, I argue that failure to discharge a function counts as a case of malfunction, rather than non-function. A killer who shoots his victim in the heart may stop the pumping of the blood; it would not, however, change the function of the heart of his victim (Loddo 2016, 295–96). In this case the victim's heart does not lose its function; rather, the heart malfunctions. This distinction serves as a basis for understanding function not merely as descriptive, but as giving rise to non-linguistic (and indeed non-agentive) evaluative standards.

Third, I review different and progressively more complex examples of functional norms: knives, hearts, assassins and soldiers. The aim here is to show that these functional standards operate independently from morality. Additionally, they may conflict with some moral norms and in some cases are so important as to override them.

From teleology to functions

According to the Oxford dictionary, a function is 'an activity that is natural to or the purpose of a person or thing'. This definition echoes a long tradition of thought, which has viewed functions in terms of teleological final causes. The name 'teleology', despite the Greek etymology, was coined by German philosopher Christian Wolff (1737). The roots of this concept however were intended to reflect back to ancient Grecian thought. Plato, for example, proposed an external teleological conception, insofar as he posits a final cause to be what an intentional external agent desires with regards to some object (any human artefact, or the world as created by the Demiurge). The value achieved by reaching the goal is thus a value from the perspective of that external agent. On the contrary, Aristotle's teleology is more naturalistic, as it does not presuppose an external intention as a source of value. While Aristotle recognized the existence of external teleology, he was more interested in internal teleology, where the evaluation of a goal as good is made from the perspective of the entity whose good is involved, not from that of some external agent (McLaughlin 2001, 17).

This talk of internal final causes is particularly apt when we discuss human artefacts. Something created by human intention is infused by the human goal that motivated the creation. Indeed, the object is brought into being by the planned end in the mind of its creator. Say I want something that cuts. I might seek out a particularly thin rock, hone its edge on a bigger rock and attach it to a wooden shaft . I have thus created a knife. The final cause of the manufact is to cut, because this is the design I had in mind when I started working. The purpose of the knife is cutting, because I forged it with such intention in mind. Finally, I may be a rather clumsy artificer, and the final knife may not be able to cut anything. It is still a knife, however, because I designed it and produced it as such, but it is a very bad one because I failed to do a proper job.

Attributing functions to artefacts is thus quite straightforward, and there is nothing particularly mysterious about such processes. In the classic and medieval era, teleological explanations in terms of final causes were, however, also commonly used to make sense of natural phenomena. Insofar as the world was understood as the creation of an intentional being, God, it was possible to talk about his creation as purposeful in the same way as human artefacts. One could say that the purpose of the heart is pumping blood, insofar as it was designed by God with this goal in mind. This was not an entirely unreasonable belief at the time. Given the extreme mechanical complexity and adaptiveness of various animals, the natural world could be reasonably explained only by some divine agency that purposively designed its marvelous inhabitants. The metaphor of a divine watchmaker was quite common. For this reason, although modern scientific common-sense lead to the exclusion of teleological explanations, the relationship between science and final causes was at the time more complex. For example, while Bacon believed the search of final causes to be a barren enterprise, Newton thought that drawing inferences about God from empirical phenomena did 'certainly belong to Natural Philosophy' (Newton 1934, 546).

A new development began with Darwin, who first realized that there is 'no more design in the variability of organic beings [...] than in the course which the wind blows' (Darwin 2003, 431). Even the prismatic complexity of nature could be accounted for by the simple laws of random mutations and natural selection. God had become an unnecessary hypothesis to explain the seemingly intentional complexity of nature.

However, despite the opposition to teleological causes, implicit references to purposeful mechanisms continue in science to this day, albeit under the less suspicious language of functions. This is not surprising insofar as thinking in terms of functions has a high pragmatic value in two senses.

First, we don't fully understand something until we understand the role it plays in the system, which can be intuitively understood as its function (Cummins 1984; Nagel 1977). Imagine

some alien were to acquire a human watch. The alien may gain a perfect description of the internal mechanism down to the atomic level without understanding that the watch is aimed at tracking time. Would we say he understands the watch? This is not only true of human artefacts, but also of biological organisms. William Harvey, for example, famously discovered that the function of the cardiac muscle is to pump the blood around the body. Before him, did we really understand the heart?

Functions may be useful in science for another, opposite reason. Postulating some function may lead to genuine scientific discovery when the scientist seeks out the mechanism through which the supposed function is carried out. We may discover a new species of animal without eyes, and it might be worth investigating what specific organ discharges the function of sensory perception; the answer may be as strange as echolocation in bats or electroreception in some fishes. To give a historical example, scientists discovered the existence of RNA when they were seeking the mechanism that performed the function of protein biosynthesis (Enc 1979, 354–56).

The hard question is whether this pragmatic usefulness of function is a mere heuristic or whether it can play a proper causal role in a scientific explanation. In light of such considerations, Hempel, for example, saw no reason 'for denying the status of explanation to all accounts invoking occurrences that temporally succeed the event explained' (Hempel 1965, 353–54). However, Hempel also denied that functions do in fact count as valid explanations. Searle (1994; 2010) also famously disputed the idea that biological functions are properly natural, arguing that they always depend on a particular human observer, who attributes them in light of an explanation that depends on his intention.

To vindicate the use of functions in biology and, to a lesser degree, in social sciences, however, Searle's subjectivism of functional attribution will not be sufficient. As a consequence, a lively academic literature has recently developed seeking to defend functions in a naturalistic way, deprived of intentional presuppositions. The intuition is that after Darwin we must give up the idea of natural design but not necessarily of function (Davies 2003).

A first attempt at such a reconceptualization of function is the one provided by Larry Wright (1976, 81)[1]:

(a) X is there because it does Z,
(b) Z is a consequence (or result) of X being there.

This understanding of functions intuitively fits human artefacts insofar as they come into being because they were designed with a purpose in mind. The idea in the mind of the creator counts as an *ex ante* cause that crucially contributes to the existence of the manufact. Consider the microwave as an example of human artefacts:

'The function of microwaves is heating food' means

(a) Microwaves are there because they heat food,
(b) Some food being heated is a consequence (or result) of microwaves being there.

Yet, thanks to natural selection, this notion of function also fits the biological world: pumping blood is what explains why we have hearts, even if no one designed hearts for such a purpose. Phrasing it in terms of Wright's definition:

1 An extensive literature followed Wright's account. For an overview, see for example (Allen, Lauder, and Bekoff 1998; Andre Ariew, Cummins, and Perlman 2002; McLaughlin 2001; Moreno and Mossio 2015, 65–69). For a more critical overview, see (Piasentier 2020).

'The function of the heart is pumping blood' means:

(a) The heart is there because it pumps blood,
(b) Pumping blood is a consequence (or result) of the heart being there.

Functions in this sense are not simply properties of things but features that explain the existence of things. Such an account came to be known as etiological because it is both causal and historical. In short, in order for something to be considered a function, it must have a disposition (a) and a feedback (b). By disposition is meant that all Xs have a tendency to Z. All hearts have a tendency to pump blood. Some may do it better than others, and in rare cases some hearts do not pump blood at all. Yet on average hearts do tend to pump blood. However, the innovative focus is on the feedback condition, which makes this notion of function historical. It is not enough that Xs tend to Z, but it must be the case that Z is something that causally contributed to Xs being around. To be more concrete, it is not enough that hearts tend to pump blood around. It must be the case that pumping the blood contributes to the existence of hearts. Hearts in fact also have a tendency to emit beating sounds, yet this seems intuitively a mere accidental quality, rather than a function of the heart. The etiological account explains this intuition without referring to a divine design or mysterious final causes of the heart. While pumping the blood was causally instrumental in the historical spreading of hearts, emitting beating sounds was not.

Recall the epistemic skepticism towards teleology, insofar as the cause seemingly comes after the effect. This is not a problem for artefacts. Insofar as human intention comes prior to the manufact's creation, there is no ex post causation. However, ex post causation was a major problem for natural functions, because, absent a divine creator, there is no cause *ex ante* to explain the result. How can the pumping of blood explain the existence of hearts, if before hearts came to be there was no pumping of blood? The latter cannot really be a cause of the former, if it existed only after the former came into being. The process of natural evolution, however, provided a neat way to respond to this methodological difficulty: random mutation is the true causal mechanism which explains how the pumping of blood emerges in hearts, while natural selection explains why this then spreads to other organisms (Mahner and Bunge 2001). Wright's account thus solves the problem of the epistemically suspicious retroactive causation of teleological final causes for natural objects.

The same doubt about ex post causation affects the credibility of applying etiological functions to the social realm. Functional explanations were popular in political science during the late 1960s and 1970s (Parsons 1991; Luhmann 1995; Easton 1965). Yet many epistemological doubts were raised against sociological functional accounts, even by those like Jon Elster who accepted them in the life sciences (Elster 1994). Part of the problem is that functional explanations defied the explanatory golden standard of methodological individualism, i.e. the idea that only individuals command autonomous causal power[2]. Yet the most difficult point was that while natural selection provides a mechanism that explains why function can be causally relevant in explaining the existence of function bearers, no comparable mechanism was offered in the social sciences. However, there does not need to be anything mysterious about selection in human contexts. A famous and widely used model of explanation is the 'invisible-hand', which precisely applies the evolution scheme to the social world and explains

2 See: 'in sociological work these collectivities must be treated as solely the resultants and modes of organization of the particular acts of individual persons, since these alone can be treated as agents in a course of subjectively understandable action' (Weber 1978).

seemingly purposeful effects that were not produced by intentional design. In this case, the mechanism at play is usually a filter or strategic equilibrium, that allow only some variations to survive (Nozick 1974, 18–22). The problem of the missing mechanism in the social sciences partially disappears when one considers carefully what it is thought to explain. According to Pettit, functions do not explain the existence of a phenomenon but rather its resilience, i.e., its resistance to existential shocks (Pettit 1996, 291). This is not very different from the natural world, where functions are relevant because of natural selection, but the *ex ante* generative cause is random mutations. Additionally, the importance of evolution in explaining group behavior is currently rising. Biology classically questioned the possibility that natural evolution could apply to groups. As evolution was properly grounded on gene mutations, it was meant to apply to single genes, to individuals, or at most to genetic kins. However, Darwin explicitly considered group selection an important domain[3], and recent development are trying to expand the scope of evolutionary explanations to encompass groups (Nowak, Tarnita, and Wilson 2010), and even the historical dynamic (Turchin 2003).

Malfunctional and non-functional

In artefacts it is quite straightforward to talk about some 'anticipated good (or apparent good) that the function bearer serves (or is thought to serve) that helps to explain why it is there' (McLaughlin 2001, 57).

Wright's analysis of function was, however, aimed at expelling not only divine final causes but also all evaluations. Contrary to other accounts[4], Wright intended to explain why some property is a function without reference to the welfare of the organism. To see why this is the case consider the following example.

The fur of a polar bear has the function of retaining heat, even if the polar bear dies from heat stroke at the equator, which would obviously be a negative consequence in terms of the welfare of the bear. Thus, even if under normal circumstances a performed function is beneficial because it allows the organism to thrive, under extraordinary circumstances it may harm the organism.

Now let's consider the opposite case. A polar bear has a mutation that produces many extra glands that secrete excessive transpiration. This counts as a deadly genetic disease in the polar circle, because cubs with this variation do not survive. Suppose the variant polar bear is brought to the equator before it dies. Here its condition is actually an advantage. Not only the bear's welfare but also its fitness is improved. Would we say that he acquired a new function, that the function of the extra glands is to secrete excess heat? According to the historical account we could not. The trait has not been selected for this yet. However, if the bear thrives in the new habitat, and reproduces, spreading the condition, it will be properly be called a function in subsequent generations. In conclusion, it still seems true that a trait which is not functional is beneficial to the organism.

3 It must not be forgotten that although a high standard of morality gives but a slight or no advantage to each individual man and his children over other men of the same tribe, yet that an increase in the number of well-endowed men and advancement in the standard of morality will certainly give an immense advantage to one tribe over another. There can be no doubt that a tribe including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage, and sympathy, were always ready to aid one another, and to sacrifice themselves for the common good, would be victorious over most other tribes; and this would be natural selection. At all times throughout the world tribes have supplanted other tribes; and as morality is one important element in their success, the standard of morality and the number of well-endowed men will thus everywhere tend to rise and increase. (Darwin 2004)

4 For Hempel (1965), Nagel (1977), Ruse (1971) and Elster (2003) one of the essential aspects of functional explanation was the beneficial relation of the function bearer to its containing system. Such considerations however are more difficult to square with a natural view of the world.

Contrary to Wright's intention, other scholars developed his account to include normative evaluations. Yet they do so in a way that does not refer to the welfare of the organism. Ruth Millikan (1989) focuses on feedback (b), while she is somewhat skeptical about the need to ascertain the probabilistic tendency (a). According to her, the primary mechanism of feedback is reproduction. In her conception of 'proper function' (Millikan 1989) the function bearer needs only the right kind of previous history, not necessarily the right kind of present and future. In other words, it needs to have contributed to the past reproductive success of the thing, but it needs not contribute to the present or future reproductive success. Say we move to a strange planet, with weird gravity laws that make the pumping of the blood damaging to the body: the heart will maintain its function, even if it becomes damaging to the organism. A more realistic example is the mule's heart, which has the proper function of pumping the blood even though the mule is sterile, and the heart does not contribute to its reproduction at all.

Functions thus appear quite different from mere descriptions[5]. A microwave's function is heating food, even if it is never used to heat food. I could use my microwave as a drawer for my socks, and yet its function will remain heating food. The reason is that being used as a drawer for my socks is not why my microwave was created. I may also never take the microwave out of the box to use it. Yet heating food is still what explains why that microwave came to be. Heating food is still the function of my microwave even if it is broken, or if it has always been broken (Hardcastle 2002). As Karean Neander puts it: 'To attribute a natural function [...] to something is to attribute a certain kind normative property to the thing. That is, to attribute an evaluative standard to it that it could fail to meet, even chronically (i.e. systematically and consistently and even under ideal circumstances)' (Neander 1999, 14).

The important point here is that tokens may fail to discharge their functions, or they may not have that function. A species living in a dark cave may lose its sight in later generations. Its residual eyes do not have the function of sight. Quite the opposite, the eyes of a blinded animal outside the cave retain the function to see, even if they cannot discharge it any longer. Historical accounts, as we have seen, perfectly account for this difference between malfunction and non-function[6].

If Millikan and Neander are right, it is acceptable to speak about malfunctioning in entirely naturalistic terms. As such, functions do operate as natural normative standards: standards of good and bad performance, independent of the observer's intention or linguistic description.

Functional Normativity

What I call 'functional normativity' is the normative judgment that something counts as good when it performs its function well. This seems independent from moral standards and it might even take priority over them in some cases.

Consider the case of a knife. Knives are designed to cut; therefore it is safe to say that their function is cutting. In this very basic sense, a (functionally) good knife is a knife that is good at cutting (Thomson 2015, 69).

There are many other qualities, based on which one might positively evaluate a knife: being durable, light, well balanced, aesthetically pleasing, etc. A knife, however, that satisfies all

5 Indeed, functional attributions are often examples of 'cryptonormative judgments' (Worsnip 2017).

6 In social cases it is admittedly more difficult to distinguish malfunction and non-function. One reason for this is that, as I have already remarked, it is more difficult to talk about natural selection. A different reason why it is more difficult is that people may disagree about what a social function should be. Those accounts that view functions as not genuinely natural, but superimposed by the interest of the researcher, cannot properly admit of social functions, insofar as people under a sort of social institution will disagree about whether it should have a function. In sharp contrast with etiological functions, these accounts do not allow a distinction between malfunction and non-function.

these other desiderata, but fails its function of being able to cut, will not count as a good knife. As there is a pluralism about moral outlooks (Berlin 1998), there could be a pluralism of knives: possibly all these different evaluative considerations cannot coexist in a single knife, and people may reasonably disagree about how to rank them. Yet the ability to cut seems particularly important, almost constitutive of being a knife.

The example of knives elucidates how the functional standard is not reducible to moral standards. Intuitively, the ability to cut well is not a moral property at all and is only pertinent when we evaluate knives: being able to cut will likely be a disvalue in a microwave or in a human being.

Regarding the previous analysis of etiological functions, a similar reasoning also applies to biological context. The case of hearts provides a good example of functional normativity, in which the subject is much more important to us than knives are. If the heart's function is pumping blood all throughout your organism, a good heart is one that performs this task well. A bad heart, one that fails to pump blood around the body satisfactorily, is something we have reasons to fix. Unlike the case of the knife, we care a lot about having a good heart. A bad heart, in fact, threatens our very survival.

As in the example of knives, moral considerations seem completely separated from the functional goodness of hearts. The functional standard applies regardless of whether we want the particular person to survive. Hitler's heart is good if it pumps his blood well. We may however have other reasons to want Hitler's heart to be a bad heart.

Knives and hearts illuminate how functional standards can be detached from moral standards, yet they do not adequately convey the possible tension and trade-offs between the two. Moving to the social world, imagine instead the extreme example of a good assassin. It could be argued that the function of an assassin is killing people on demand. A good assassin, therefore, in an intuitive sense, is someone who is good at killing.

Assuming that morality requires not killing people for money[7], then a good assassin cannot be a good man. Being a good man, in fact, requires not performing the function that assassins enact. This example demonstrates quite vividly that functional standards can be in clear tension with moral standards. In this case, either the functional or the moral standard can be satisfied: a good person cannot be a good assassin, and a good assassin cannot be a good man. We do not care about good assassins like we care about good hearts. The possible conflict between moral and functional normativity is straightforwardly resolved in favor of morality, and the conclusion is that there should not be assassins.

Imagine a less sinister example: a good soldier. If the function of a soldier is exerting organized violence, a good soldier is someone who can do so effectively. We can acknowledge that the Wehrmacht in WW2 had many good soldiers, even if we deem Nazi Germany's goal repugnant. There are indeed other moral dimensions upon which we assess soldiers. We may believe that being a *morally* good soldier overall requires one to fight in a just war, or to fight reasonably justly. Yet this would define the requirements of a good person who happens to be a soldier. Imagine someone who fully respects *ius ad bellum* and *ius in bello* but is completely incapable of fighting. Such a person would hardly qualify as a good soldier. In some ethical outlooks, the functional and moral normative demands may even be incompatible. Let us assume morality requires a good person to categorically abstain from inflicting harm against other human

7 We may assume the contrary: that using lethal violence is morally justified under some circumstances. A morally good assassin would be someone who only kills victims who deserve to be killed (e.g. Dexter, the tv-series serial killer). However, if such a person were a completely inept killer, it would still be strange to qualify him as a good assassin, despite him being a good man who tries to be an assassin.

beings. In this case, one cannot be a good person in the moral sense and a good soldier in the functional sense. In a similar sense, Machiavelli claimed that a good Christian might be a good person but cannot be a good politician (Berlin 1972, 45–47; Machiavelli 2013).
Unlike in the case of assassins, we cannot as easily conclude that if a good person cannot be a good soldier, then there should not be soldiers. Many would agree that soldiers are necessary for the survival of political institutions in a competitive international environment. Thus, like in the case of the heart, we do care about good soldiers for our survival.
One possible objection to this is that this argument is still moral 'all the way down'. The reason why the functional normativity of specific functions matters may depend on the 'moral goodness' of said functions. In other words, we accept the functional standard of soldiers and reject that of assassins because soldiers are morally warranted, while assassins are not. I do not believe that there are good and bad functions *simpliciter*, but the moral goodness of a function largely depends on the context. A function, say the ability of soldiers to fight, may be morally acceptable or even required in some cases, but morally unacceptable in others. Yet even a soldier who fights for an unjust war may still count as a good soldier in a technical functional sense. Conversely, being a good assassin may be useful in morally acceptable cases (e.g., to block a trolley with a fat man or to kill Hitler).
One may also worry that functional normativity leads to an 'almost unlimited proliferation of kinds' (Maynard and Worsnip 2018, 361); each function would elicit its own normative standard. There are virtually unlimited functions, and thus, the critique may go, virtually unlimited normativities. The response here would be that the broad category is functional normativity, and proliferation is only in instances of functional normativity. Similarly, there is only one broad category of prudential normativity, even if it involves different prescriptions for each person.

Conclusion

In conclusion, this paper argued that functions should be conceived as features that explain the existence of things, and this is not a merely descriptive notion. On the contrary, etiological functions ground normative standards that may be independent from morality (like knives) yet important to us (like hearts). They might conflict with moral norms (like assassins), and even take precedence over them (like soldiers).

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JEAN-CHARLES PELLAND
New College of the Humanities;
McGill University
jeancharles.pelland@mail.mcgill.ca

GROUNDING NORMATIVITY IN BIOLOGY: THE UNEXPRESSED RULES OF CORE COGNITION[1]

abstract

Saul Kripke's (1982) sceptical take on Wittgenstein's rule-following paradox challenges us to find facts that can justify one interpretation of a symbol's past use over another. While Ruth Millikan (1990) has answered this challenge by appealing to biological purposes, her answer has been criticized for failing to account for the normativity of rules like addition, which require explicit representations. In this paper, I offer a defense of Millikan. I claim that we can explain how we build intentions to add from the content of core cognition modules like the approximate number system, and argue that Millikan's answer is better equipped to explain the origins of rules than communitarian approaches like that endorsed by Kusch (2006). I then explore the worth of pluralism about rules and try to find common ground between expressed and unexpressed rules in terms of expectations of how the world is supposed to behave.

keywords

Kripkenstein, biosemantics, normativity, biological functions, core cognition, numerical cognition, approximate number system, rule-following

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1. Introduction

A common, seemingly platitudinous claim about meaning – at least, for words and symbols – is that it is somehow normative:[1] if a symbol has a particular meaning, then there are rules dictating correct and incorrect ways of using it. When using the symbol '+', for example, we tend to think that the meaning attached is the addition function, and that there are correct and incorrect ways of adding. Threatening our meaning-determinist inclinations, Saul Kripke's (1982) sceptical take on Wittgenstein's rule-following paradox challenges us to find facts that can justify one interpretation of a symbol's past use over another. After considering tempting answers like facts about dispositions and intentions, Kripke's sceptic claims no such facts can be found, which pushes him to opt for an interpretation of the meaning of symbols that is based not on metaphysical facts, but on social convention. This communitarian solution, while popular, has problems explaining the origins of social convention, which, on pain of regress, cannot be a matter of social convention itself. Ruth Millikan's (1990) naturalization of intentions in terms of biological purposes provides a promising solution to Wittgenstein's paradox, rescuing some of our intuitions about the objectivity and determinacy of language and meaning by appealing to biology. However, attempts to ground normativity in biology have come under fire. A number of authors complain that biological norms are not real norms (e.g. Kusch 2006, Hutto & Satne 2015).

This paper offers a response to these criticisms of biological rules. I start off by summarizing Kripke's challenge in section 2, before presenting some of Millikan's response to this in section 3. In section 4, I argue that we can answer Kripke's challenge by applying Millikan's biological purposes to recent work in numerical cognition, allowing us to explain how we build intentions to add from the content of core cognition modules like the approximate number system. This is followed in section 5 by a response to Martin Kusch's (2006) criticism of Millikan. Then, in section 6, I try to reconcile Millikan with her critics by adopting pluralism about rules. In section 7 I end by trying to find common ground between expressed and unexpressed rules in terms of expectations of how the world is supposed to behave.

1 See e.g., Whiting 2007 for a defence of this claim. See also Whiting 2013 for a comparison of competing accounts of the normativity of meaning.

2. Kripke's Wittgenstein

Observing that our past use of a symbol can be described using an infinite number of rules, Wittgenstein famously wrote: "this was our paradox: no course of action could be determined by a rule, because every course of action can be made to accord with the rule." (Wittgenstein, 2001, §201) Building on Wittgenstein's observation, Kripke imagines a sceptic who challenges us to come up with a fact that allows us to determine that someone means addition by '+' rather than 'quaddition', where quaddition defines the quus function (⊕) as follows:
$x \oplus y = x + y$, if $x, y < 57$; $x \oplus y = 5$ otherwise.[2]
Kripke argues that any fact about the past use of a symbol – be it the intention to use it in a certain way, the qualia associated with its use, the dispositions to use it in various circumstances, etc. – is consistent with any number of quaddition-like rules. If Kripke is right, this implies that there are no facts about whether we meant addition rather than quaddition when we used '+'. Since Kripke's challenge needn't be restricted to '+', nor even to symbol use, the problem quickly spreads to *any* rule, linguistic or not, forcing us to wonder how there could there be facts about whether we are following one rule rather than another. Kripke's sceptical challenge, if left unanswered, leaves no room for determinate rule-following of any kind.
A tempting way to answer Kripke's sceptic is by appealing to intentions: when I use the symbol '+', I mean addition, not quaddition, because in the past, I intended to add things, not quadd things. Unfortunately, as Wittgenstein's discussion of the regress of explanations taught us (e.g., in 2001: §85-88), when we try to identify what constitutes an intention to follow a rule – say, addition – it seems the only answer we can give involves intentions to follow other rules. But then this more basic intention is just a 'rule for interpreting a rule', to which the sceptic can pose his challenge anew. For example, if I wanted to say that my meaning addition by '+' consisted in my intention to count both addends, the sceptic could simply ask what my intention to count consisted in, and how it differed from, say, quounting, where quounting is identical to counting for all past behaviour, but diverges after a yet-to-be counted (or quounted) number.
Answering the sceptic by appealing to explicit representations of rules like intentions leads us to regress, so it looks like we must abandon intentions as a potential solution to the challenge. And yet, this only follows if the only way to explain what it means to intend to follow a rule is by referring to another intention. One way to answer the sceptic, then, would be to explain what intentions to follow rules are *without* recourse to other explicit representations. Ruth Millikan's (1990) naturalization of intentions allows us to do just that.

3. Millikan's straight answer: biological norms

Millikan delivers a biological approach to rules in which norms for biological entities can be derived from their biological purposes. Biological purposes are rules set by evolutionary design to which entities may or may not conform – more often than not, without being aware of it. The basic idea is that even though biological entities are disposed to behave in many ways, only some of this behaviour accounts for the proliferation of the entity's ancestors. Those dispositions responsible for a behaviour that explains why they have survived in the past are singled out as being in accordance with the norm set by the entities' biological purposes.[3]
On this view, to assess whether an entity's behaviour is correct, we need to refer to its history and look for behaviour and dispositions that have allowed its species to thrive:

2 Needless to say, the restriction to numbers smaller than 57 is merely meant to simplify the discussion. Basically, quaddition is a function identical to addition for all sums that have already been calculated, but whose value differs after a certain yet-to-be-calculated pair of numbers.
3 This is, of course, an overly simplified summary of Millikan's account of biological purposes. For a more elaborate discussion, see Millikan 1984 (esp. Chs. 1 and 2), as well as Millikan 1989a, 1989b. See also Shea 2006.

> it is the reference to evolutionary history that [does] all of the work in explaining how norms come to apply to the activities of an animal, in explaining how there can be a standard from which the facts of individual behaviour diverge. (Millikan, 1990, p. 337)

Simple examples of biological purposes include the blood-pumping function of our hearts, the communication function of bees' mating dances, and the reproductive purpose of interceptive flight patterns of male hoverflies. At a more complex level we find biological functions that drive animal learning. Such learning is a biologically-determined rule that governs the behaviour of the animals' nervous systems and has helped their species thrive throughout history by allowing them to adapt to their environment – which, in some cases, includes complex social networks. For example, by rewiring the neural connections between smells and memories, such learning mechanisms allow rats to avoid eating food that previously made them sick, thus decreasing their chances of getting poisoned.

Applying her theory to the complex biological purposes of humans, Millikan proposes that we think of human intentions as a kind of biological purpose. Much like we can explain a circus poodle's ability to learn how to ride a tricycle in terms of the evolutionary advantage conferred by its innate learning mechanisms, we can describe the mechanisms and dispositions behind intentions to follow rules like addition (or quaddition) in terms of evolutionarily-inherited biological purposes. Like the poodle's cycling abilities, the human ability to form intentions is grounded in neural mechanisms that need not be driven by any explicit representation or intention: "the unexpressed purposes that lie behind acts of explicit purposing are biological purposes." (Millikan, 1990, p.330). On this view, my intention to add is the result of how my experience has shaped innate biological mechanisms handed down by evolutionary design.

How can this help us answer the sceptic? By putting an end to the regress of intentions described above:

> Explicitly meaning or intending, if this requires representing what one intends, presupposes a prior purposing: purposing to let the representation guide one in a certain way...this prior purposing cannot be analysed as the original explicit purposing was analysed without regress. Rather, a prior unexpressed purposing must be assumed. The reasonable conclusion seems to be that ordinary explicit intending rests on biological purposing – biologically purposing to be guided by, to react this way rather than that to, one's representations. (Millikan, 1990, pp. 342-3)

Millikan's classification of intentions as biological purposes gives us a framework in which we can express facts about intentional behaviour without needing to appeal to further intentions. Rather, to describe the content of an intention, we need to look at an individual's history, environment, and neurological makeup. In so doing, we do not enter a regress – at least, not an unending regress of intentions, since, in the end, some representations guide biological entities without the entity being aware of it.

For example, consider the 'hoverfly rule': if a male hoverfly detects female-like stimuli, it enters an interceptive flight pattern, guided by representations and mechanisms of which it is (presumably) not aware. Similarly, while some human intentions may owe their content to other intentions, Millikan's idea is that some intentions are formed from representations that guide our behaviour without our being aware of their content. To illustrate how this might help us answer Kripke's sceptic, in the next section, I discuss how we could exploit recent work in core cognition to explain how we form the intention to add from evolutionarily-inherited content, which, at least initially, we need not be able to form any intentions about.

4. Core cognition and addition

Here, we want to use Millikan's biological purposes to stop a regress of intentions in answering the sceptic. Given that intentions to add develop out of previous intentions – including intentions to count – this means that at some point not too far down the explanatory ladder we need to find facts about non-explicit representations involved in forming intentions to count, so that we can explain how these differ from intentions to quount. But what sort of non-explicit representations guide us towards counting? To answer this, it may be useful to look at recent progress made in the study of how we think about numbers.

Thanks to methodological and technological advances in the study of numerical cognition, many theories of the development of representations with numerical content have sprung up in recent years (e.g. Dehaene 2011; Carey 2009; DeCruz 2008; Leibovich et al. 2017; Cohen Kadosh & Walsh 2009). Research in this burgeoning field has yielded tremendous findings, including the discovery of innate cognitive systems that may serve as the building blocks of our formal arithmetical abilities. While there is still considerable debate regarding how these systems interact and develop to allow us to form mathematically-viable numerical content, there is almost universal agreement that at least two cognitive systems – the so-called approximate number system (ANS) and the object-file system (OFS) – supply the basic content that eventually allows the construction of explicit numerical representations. In a nutshell, the ANS tells us how many things there are in a part of the environment we are paying attention to, but its precision decreases as the number of things it tracks increases. As for the OFS, while it is not dedicated to tracking numbers of items, it does allow us to track the spatiotemporal properties of up to four objects at a time, and can respond to changes of numbers of items within this restricted numerical range.[4]

The important point to consider here is that there is ample evidence from habituation and violation-of-expectation studies involving animals and pre-verbal infants that these systems are innate and evolutionarily-ancient. This means they produce representations with quantity-related content in organisms whose ability to form explicit intentions is highly doubtful, if at all plausible. For example, there is little reason to think that rats can form intentions, and yet they are equipped with groups of neurons whose unexpressed biological purpose is to take input from the senses to yield non-explicit representations with quantitative content (Meck & Church 1983). Core cognition modules like the ANS and the OFS are often seen as supplying building blocks for more advanced cognitive abilities like understanding what agents, objects, and numbers are (Carey 2009), as well as providing a basis on which many features of language, such as the mass/count distinction, are built (Strickland, 2016; Odic 2014).[5] Although details about how we build complex concepts from core cognition modules have not been ironed out, the strategy is usually to appeal to the effects of more general cognitive faculties like associative learning, general learning mechanisms like induction, or language.

How can this help us with the sceptic? By illustrating how intentions to add could be built from representations that can guide our behaviour unintentionally, like those produced by the ANS and the OFS and the learning mechanisms that operate on these. When Kripke's sceptic asks for a fact that can allow us to determine that we are adding rather than quadding, we can appeal to facts about the content of core cognition modules to stop the regress of intentions when explaining why we are adders, not quadders. This is because such innate systems wear

4 While the literature on these systems has grown exponentially in recent years, an easy and short introduction to them remains Feigenson et al. 2004. For a treasure trove of findings and interpretations, see Cohen Kadosh & Dowker 2015.

5 This being said, see Rips 2017 for a sceptical take on such attempts to explain conceptual development from core cognition.

their rules on their sleeve, so to speak: their content, which has been carved by Darwinian processes, is forced upon us. If the rules that govern these systems are not amenable to Kripke's sceptic, then if we build our explicit rule-following from them, then we can expect our explicit rule-following to be quus-free.

As it turns out, there is good reason to think that unexpressed rules like those that govern how innate systems like the ANS behave can't be quussed. First, as sketched above, these rules have been set by evolutionary history. This biological standard means that any quus-like reintepretation of rules derived from biological functions are simply less efficient descriptions of why certain traits have helped organisms survive. For example, while we could potentially explain hoverfly behavior in terms of a quoverfly rule, the active part of the explanation would be solely done by the part of this rule that coincides with the hoverfly rule, while the Kripkean part of the rule does no explaining whatsoever, as Millikan points out. Indeed, any number of quus-like rules could describe the behaviour of systems like the ANS, but only the non-quussed aspect of such rules explains their role in helping organisms equipped with the systems thrive. But "a complexity that can simply be dropped from the explanans without affecting the tightness of the relation of explanans to explanandum is not a *functioning* part of the explanation." (Millikan, 1990, p. 334) Further, and perhaps more importantly, quus-like reinterpretations are in a sense parasitic on their regular counterparts: for example, one cannot build a quus rule without first having a plus rule.

So, keeping in mind that the unexpressed rules followed by biological systems are immune from Kripke's sceptic, it looks like we have a story to tell about how intentions with numerical content, such as intending to count and intending to add, are grounded in the biological purposes of neural systems tuned to quantity-related information in the environment, like the ANS. I intend to use the symbol '+' to mean addition because I learned to associate this symbol with the act of adding, not quadding. I am adding, not quadding, because when learning to add I learned how to count the addends, not quount them, and my intentions to add are built from being guided by this counting-related content. When pressed further by the sceptic, this time regarding intentions to count, not quount, I can appeal to the content used to learn how to count: when learning to count, I learned how to associate number words to representations of discrete numerical quantities, and counting involves being guided by this association.[6]

Now things get interesting: if the sceptic tries to question numerical quantities, perhaps with numerical quuantities, I can appeal to the content produced by core cognition modules to stop the regress of intentions. This is because the rule I follow when being guided by representations of quantities in counting is not a rule I set for myself intentionally via a learning process. Rather, the rule I follow when entertaining content produced by core cognition modules like the ANS and the OFS is a biological rule which I have no choice to follow. The same can be said for the rules I follow when being guided by general learning mechanisms like induction and associative learning. My intention to count is built from these innate systems, whose rules are unexpressed and unquussed. This means we have a rough sketch of how we can give facts about intentions to add without running the risk of running in endless explanatory circles. The upshot is that intentions are fair game in answering the sceptic, and we can meet Kripke's challenge by providing biological facts about where intentions come from.

6 As mentioned above, the details of how we build precise numerical content from the content of systems like the ANS have yet to be settled, but this need not prevent us from imagining how such systems are involved in learning to count. For example, there is strong evidence that the words in our count list eventually get mapped onto the content of systems like the ANS (Dehaene 2011, Dehaene & Cohen 2007), though as Carey (2009) points out, there is evidence that this mapping occurs *after* we have mastered the use of number words beyond the subitizing range (i.e. larger than four).

5. Biological rules?

Setting aside potential issues concerning the accuracy of this sketch, there is an important question raised by saying that expressed rules like addition and unexpressed biological rules like those that apply to the functioning of systems like the ANS and the OFS are both instances of rule-following. The question concerns the relation between the unexpressed content behind biological rules like those that apply to hoverflies and the ANS and the expressed content involved in intentions to follow conventions like those involved in arithmetic. The relation here needs to be characterized in a way such that we can read off the normativity we associate with intentional behaviour with the normativity we find in biological functions. But biological and social norms seem to be of a different kind, since only the latter rely on understanding or explicitly representing a rule. In social rule-following, the fact that we are voluntarily and consciously being guided by explicitly represented content somehow seems to make a difference to the legitimacy of the rule: only rules that can be explicitly, voluntarily learned are supposed to count as legitimate rules.

This issue has been expressed in a variety of ways over the years.[7] For example, Martin Kusch (2006) expresses his doubts about whether Millikan's biological purposes capture the literal sense of normativity thus:

> Using normative language to describe proper functions seems inadequate. The norms and standards in question do not literally have a norm-authority, that is, someone who has introduced them and who sanctions deviation. How then are we to think of talk of biological norms? Is this talk not merely metaphorical? If so, then it is hard to accept that Millikan has given us a naturalization of meaning and normativity. After all, in order to understand the metaphorical sense of normativity we first have to understand the literal sense. And this literal sense presupposes an understanding of (expressed) intentions. (Kusch, 2006, p.73)

Here, Kusch proceeds on the assumption that, to be considered legitimate, a norm must be introduced and sanctioned by a 'norm-authority'. The claim is that since there are no such norm-authorities behind evolutionary design, biological purposes cannot be considered legitimate setters of norms. As I hope to show in this section, it is difficult to see how to frame this objection to biological normativity on solid grounds.

The main problem here is that Kusch begs the question of the origin of normativity by requiring that norms be (intentionally) introduced by norm-authorities. Kusch's claim that the normativity of biological purposes is a metaphorical application of legitimate normativity and that the literal sense of normativity requires understanding intentions is problematic for the same reason.[8] For while it could turn out that we do indeed need norm-authorities and intentions to have real norms, simply positing this without arguing for it is not enough to dismiss the possibility that normativity be grounded in biology.

On the contrary, taking a closer look at these norm-authorities raises a few difficult questions, some of which might be answered by appealing to biological functions. For example, how could a norm authority be able to go through the infinite uses of a word and 'sanction

7 See Hutto & Satne's 2015 discussion of Neo-Cartesianism for a few examples.

8 Kusch's rejection of Millikan's proposed grounding of normativity in biology is reminiscent of Bloor's, who claims that rule-following is an *actor's* category, and that an 'actor's own awareness of these norms is constitutive of their very existence as norms' (Bloor, 1997, p.105) And yet, children learning how to dance or other forms of learning by imitation do not seem to require knowledge above anything like 'do what others are doing', and it is not obvious that every case of learning by imitation involves explicit representation of the rule being learned. Cases of animals learning how to ride tricycles or tie knots seem like obvious examples of this.

deviation' in advance? It seems that answering this question would require appeal to some kind of rule for sanctioning deviation, but this rule would require further norm-authorities and further sanctioning, thus entering us into a regress much like that discussed above regarding intentions to follow rules. In other words, if norm-authorities set norms, who sets the norm-authority's norms of behaviour? To answer this last question, it seems we either need to appeal to another norm-authority, thus generating a regress, or appeal to another mechanism that sets norms. If the latter option holds, then why bother with norm-authorities at all? A similar regress seems to threaten the popular communitarian answer to Kripkenstein: if normativity is a matter of agreement, then how can we avoid a regress when agreeing on what agreements are? Put in a Kripke-like way, if we all need to agree in order for a practice to become canonized as setting a norm, then how do we know we are agreeing with each other, rather than quagreeing?[9]

Moreover, if normativity is indeed grounded in intentional social agreement, as Kusch proposes, one wonders how these intentions get their normative force, if not from biological facts about how humans (and other animals) are hardwired to react preferentially to their conspecifics. After all, why would we be inclined to follow social rules at all unless we were biologically hardwired to do so? If anything, Kusch's norm-authorities seem to support – if not require – Millikan's grounding of normativity in biology, given that it remains a mystery where rules for their behaviour would come from, if not biology.

Consider for example rules of language: like those for biological organisms, many linguistic rules emerge as a result of Darwinian processes, because certain practices are better adapted to their environment than others, not because someone has conferred a preferential status upon them. It is difficult to see this cultural Darwinism as being exclusively the result of someone introducing rules and sanctioning deviation. There are many reasons that can explain why some practices become the norm while others fail.[10] For example, when mobile technology became ubiquitous, countless new words and expressions emerged and rapidly spread worldwide. Abbreviations, symbols, short words, all these were better suited to small keyboards, screens, and time constraints. What did *not* happen is that someone said "and now I confer thee the normal use of LOL".

This being said, even though Kripke's communitarianism is premised on the fact that there is no biological story capable of satisfying the sceptic, as illustrated by his lengthy analysis of the limitations of dispositionalism, there is a sense in which this communitarian response is compatible with Millikan's biological dispositionalism. After all, even if social conventions in general are rooted in biological purposes, this need not imply that they don't cement the meaning of specific symbols like '+'. And yet, there is a sense in which the communitarian response cannot satisfy the sceptic unless it is supported by a story like Millikan's. As just discussed, the communitarian response is not equipped to answer the sceptic's probe into how we set agreements apart from quagreements, and leaves the origins of such social norms unanswered.

But perhaps more importantly, while the facts that can explain why I mean addition by '+' include my socio-cultural history and the agreements that have been made in the past on top of my biological ancestry and individual ontogeny, the communitarian answer leaves out the fact that symbols have meaning to individuals in virtue of being associated with mental content. In many cases, symbols force specific content upon us regardless of social rules and conventions. For example, things that look like faces – including drawings of faces, but also

9 For more on this, see the review of issues with Neo-Pragmatism by Hutto & Satne 2015.
10 See Richerson & Boyd 2005 for an account of such mechanisms of cultural evolution.

arrangements of dots like stars in the sky and knots in wooden planks – will elicit content about faces irrespective of social contexts, since humans (and some other animals) are born with the ability to detect conspecifics by giving priority to certain configurations of stimuli.[11] It is highly doubtful that any amount of social coaching could manage to override such biologically-driven content.

Further, the limitations of the communitarian answer become apparent when we consider those members of societies whose biological makeup is malfunctioning for one reason or another. If facts about the meaning of symbols were constituted solely by social conventions, then all we would need in order for individuals to learn the meaning of symbols would be to satisfy conditions for establishing social conventions. But many individuals that can enter into social and linguistic conventions nevertheless fail to manage to learn the meaning of symbols like '+' due to learning or brain deficits. A particularly relevant example here is dyscalculia, which can prevent of significantly curb the ability to process numerical information. In some cases, no amount of social coaching or training can allow a person to overcome the limitations that accompany such deficits and allow them to associate symbols with the intended mental content, simply because the individual is unable to entertain it.

This illustrates how important it is to keep in mind that there is an ineliminable biological component that underlies social agreements and that without the relevant mental content in individuals' heads, it would be impossible to agree on anything. Arguably, without species-specific modules like those of core cognition of agency in humans,[12] any 'social' behavior would be the equivalent of schooling fish, whose coordinated movements can present the illusion of explicit organization, even though no one would claim that fish need to agree in order to move in harmony. If this is true, then even though many rules could not be learned outside a scaffolded social context, claiming that the meaning of a symbol like '+' is constituted by social agreements would miss an important part of the story of why such symbols are meaningful to individuals.

6. How many types of rules?

It seems we are stuck in a difficult position: on the one hand, we saw that there are thorny problems associated with views like those offered by Kusch. On the other hand, despite these issues, it does feel like the normativity of explicitly represented rules is different from that of unexpressed rules. One way out could perhaps be to accept that there are many types of rules, and none of these has priority over the other. For example, Millikan points out that are many types of norms:

> By 'normative' philosophers typically have meant something prescriptive or evaluative, but there are other kinds of norms as well. There are non-evaluative measures from which the facts or from which instances can depart; for example, a simple average is also a kind of norm. I argue that the central norms applying to language are nonevaluative. They are much like those norms of function and behavior that account for the survival and proliferation of biological species. Broadly speaking, they are biological norms. (Millikan, 2005, p. vi)

11 Of course, this is not to say that all animals share the same innate content. While we can easily show that humans share much of their innate cognitive and perceptual toolkits with other animals, it is equally easy to show that there is tremendous variation between species on what sort of content gets preferential treatment. Indigo-buntings, for example, are born with an ability that is sadly lacking in humans, that of being able to process data from the night sky to effortlessly compute where the north lies (Emlen 1975).

12 See chapter 5 of Carey 2009.

Why would intentional behaviour somehow be more worthy of normative status, as Kusch and others have claimed? After all, Millikan's biological purposes seem to have much in common with Kusch's 'legitimate' norms. For example, both expressed and unexpressed purposes involve being guided by representations. This applies to hoverflies, but also, in radically different ways, to humans. Experiments involving subliminal priming are just one of many examples of representations guiding human behaviour without our being aware of it: in such cases, our senses pick up data that do not make it to consciousness (say, because they are presented too briefly) and yet they have a clear impact on our intentional behaviour. Is this behaviour not the direct result of unexpressed biological functions? If so, then why would we not be able to classify other behaviour resulting from unexpressed biological functions – including hoverfly flight patterns – as equally worthy of normative evaluation?

Another consideration that seems to support unexpressed purposes as legitimate yardsticks of normativity is that, in many cases, even for those purposes that are originally explicitly represented, it is possible to follow the same rule without intending to. For example, at some point, tying one's shoes becomes so ingrained in our routine that we need not be aware that we are doing it. In such cases, however, unexpressed purposes are parasitic on previous occurrences of actual intentions, like intending to imitate mommy's (shoe-tying) actions, which would still require us to attribute a different status to explicitly represented rules.

What about unexpressed purposes that do not result from internalized rules? For example, can we say that the hoverfly rule involves the same kind of normativity as rules for tying one's shoes? Here, the answer is not so clear. On the one hand, it is common to think of unusual behaviour as going against established rules, even when talking about the behaviour of flies and organs. For example, if a heart beats erratically, we think its behaviour isn't conforming to its biological purpose, and we look for a cure. If a hoverfly doesn't conform to its usual flight pattern, we will think it is injured or that it is windy outside. If a person tries to tie their shoes by setting them on fire, we will think she is not following shoe-tying rules. Compare these cases with, say, calling a rock's shape abnormal. Whereas the rock may indeed have a shape that is statistically unlike most rocks, calling its shape abnormal has nothing to do with the shape it *should* have. Perhaps, here, we have a metaphorical use of normative language, or we are using a different type of norm. But biological purposes are established by reference to etiological concerns, irrespective of statistics – in fact, many biological rules fail to be followed most of the time – and thus carry a different normative component – much like the one involved in explicitly represented purposes.

On the other hand, it is common to speak of a person understanding the rules of a game, or a person following rules of etiquette, but it is not common to speak of hoverfly rules or a heart's following biological rules (at least, this is not common outside of philosophical circles). There is an aspect to rule-following that does seem to imply explicitly representing the rule in question, and this aspect is absent in most of following the rules set by evolution. Even by accepting pluralism about rules, there is a lingering problem of how biological rules relate to explicit rules: what makes them all *rules?*

7. Rules and expectations

So, how does our ability to follow explicit rules like addition relate to our ability to follow non-explicit rules like those that describe the functioning of systems like the ANS? Perhaps an answer would be to accept that not all rules require conscious awareness to be followed, but that all rules involve being guided by representations of how the world is supposed to behave. We could then explain differences in types of rules by appealing to differences in representations of how the world is supposed to behave: when these expectations come solely from innate sources like genes or core cognition modules, we could talk of unexpressed rules. When expectations are the result of learning, we could talk of expressed rules.

This way, we can accept that hoverflies can follow rules, since the hoverfly rule, though not explicitly available to the hoverfly itself, does involve a representation of how the world is expected to behave – i.e., the world is supposed to contain female hoverflies and entering into a certain flight pattern is supposed to increase chances of successful mating. The mechanism allowing hoverflies to follow the hoverfly rule is built on other mechanisms that evolved because the world contained female hoverflies that could be intercepted in certain ways. Going up the cognitive ladder (and adding a few modules to it), we can frame the unexpressed rules involved in systems like the ANS in similar ways: the world is expected to contain quantities of things, and we can expect our quantity-based interaction with it to loosely correspond to the output of the ANS, so that, for example, if we see a large quantity of food available somewhere, we can expect to eat a lot by going there.

This explains why infants and animals look longer at impossible outcomes in violation- of-expectancy studies: they have built-in expectations which embody rules about how the world is supposed to behave, and when researchers artificially break these rules, the subjects are struck by the fact that their expectation of how the world works aren't met. The bottom line is that, for both expressed and unexpressed rules, the same feeling of 'fit', or 'ought', guides our behaviour.[13] The difference is that, for expressed rules, we are equipped with a different type of expectation of how the world works, since our expectations of how the world works are built from experience and learning, while for unexpressed rules, our expectations of how the world works is inherited from biological evolution.

If this makes sense, then we can expect to ground explicit rule-following like addition in non-explicit rule-following like allowing oneself to be guided by the content of core cognition modules. Initially, the only rules we expect the world to follow are those we inherit from systems like the ANS. But as we learn more things about the world, we form explicit rules to describe how the world is supposed to behave based on our experience. But the same sense of ought remains, for both unexpressed and expressed rules, based on expectations we have about the world. The upshot would then be that explicit rules depend on unexpressed rules for their existence, but also for their normative character: it is only because we expect the world to behave a certain way that there is a sense of ought attached to rules like addition. Having learned the rule of addition by building on experience and the content of core systems like the ANS, we expect 57 + 68 to make 125, so when someone says that 57 + 68 makes 5, we feel a rule has been broken. This feeling that something isn't as it should be is arguably what we see expressed by animals and infants in violation-of-expectation studies. The difference is, they don't know a rule has been broken.

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