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CHOMSKY ON ANALYTIC AND NECESSARY PROPOSITIONS¹

abstract

My aim is to critically discuss Chomsky's position concerning the analytic-synthetic distinction and necessary propositions. To do so, I present Chomsky's objection to Quine's criticism of the analytic-synthetic distinction, and I point out that Chomsky's defense of such a distinction can be efficacious only under the assumption of conceptual innateness. I then focus on Chomsky's analysis of necessary propositions. In particular, I present Chomsky's objection to Kripke's essentialism, and Chomsky's hypothesis that the distinction between necessary and contingent truths is determined by the structure of the conceptual system and its relations with other systems of common-sense understanding. I highlight that this hypothesis is not compatible with Chomsky's own objection to Kripke.

keywords

Analytic-Synthetic distinction, "humbler" notion of analyticity, Innateness Hypothesis, essential properties, conceivability and possibility, categorization

1. Chomsky (2000, ch. 3) presents a criticism of Quine's (1951) thesis against the analytic-synthetic distinction. According to Chomsky, we have strong evidence that some analytic sentences hold in natural language, and it is plausible to assume that such sentences are a by-product of the structure of the innate conceptual system. Chomsky (2000, p. 47) mentions the semantic connection between 'to kill' and 'to die', entailing "a qualitative distinction – determined by the language itself – between the sentences 'John killed Bill, so Bill is dead' and 'John killed Bill, so John is dead'", and the relation of referential dependence adopted in Binding Theory (Chomsky, 2007, 2008; Hinzen, 2016): "it would be difficult to find a study of referential dependence in natural language that does not conclude that the language itself determines that" the relation of referential dependence holds between 'Mary' and 'herself' in "Mary expects to feed herself", and that does not hold between the same constituents in "I wonder who Mary expects to feed herself" (Chomsky, 2000, p. 47). Chomsky uses the poverty of stimulus argument to argue that the a priori knowledge ("cognizing") of the syntactic-semantic relations mentioned above is due to innate conceptual connections:

Acquisition of lexical items poses what is sometimes called "Plato's problem" in a very sharp form. [...] At peak periods of language acquisition, children are acquiring ("learning") many words a day, perhaps a dozen or more, meaning that they are acquiring words on very few exposures, even just one. This could appear to indicate that the concepts are already available, with much or all of their intricacy and structure predetermined, and that the child's task is to assign labels to concepts, as might be done with limited evidence given sufficiently rich innate structure. And these conceptual structures appear to yield semantic connections of a kind that will, in particular, induce an analytic-synthetic distinction, as a matter of empirical fact.

To the extent that anything is understood about lexical items and their nature, it seems that they are based on conceptual structures of a specific and closely integrated type. It has been argued plausibly that concepts of a locational nature – including goal and source of action, object moved, etc. – enter widely into lexical structure, often in quite abstract ways. In addition, notions like actor, recipient of action, instrument, event,

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intention, causation and others are pervasive elements of lexical structure, with their specific properties and interrelations (Chomsky, 2000, pp. 61-62).

These concepts (goal, etc.), that Julius Moravcsik has interpreted as “generative factors” (see Moravcsik, 1975, 1990), have a crucial role in the formal analysis of many syntactic-semantic phenomena, like causative (see Dowty, 1979; Levin & Malka, 1995; Parsons, 1990; Ramchand, 2008; Schäfer, 2009) and locative alternation (see Baker, 1997; Grimshaw, 1990; Jackendoff, 1990; Levin, 1993; Talmy, 2000), meaning transfer, and, more generally, in the generative analysis of lexical meaning (see Larson and Segal, 1995; Pustejovsky, 1995). Pinker (1989, 1994) has advocated from an empirical point of view that such factors are innate elements of the mind, having important roles in language acquisition and language processing. According to Chomsky, the interrelations of such factors are responsible for the distinction between truths of meaning and truths of fact. Although he does not explain exactly what he means by these notions, Chomsky mentions some examples of truths of meaning. If I state that John has been killed, then I know a priori that John is dead: this inference is a truth of meaning, that depends uniquely on the meaning of words. The same is true when we consider that ‘John persuaded Bill to go to the university’ *necessarily* entails that Bill went *sua sponte* to the university, and was not obliged. These are just some of the many examples that can highlight a strict network of semantic connections. Since the child is not explicitly instructed about such connections, but acquires them during language acquisition, Chomsky (2000) suggests that the child

approaches language with an intuitive understanding of concepts involving intending, causation, goal of action, event, and so on; furthermore, it must be that the child places the words that are heard in a nexus that is permitted by the principles of universal grammar, which provide the framework for thought and language, and are common to human languages as systems that enter into various aspects of human life. These elements also appear to enter into an integrated “conceptual scheme” a component of the initial state of the language faculty that is fleshed out in specific ways, with predetermined scope and limits, in the course of language growth, one aspect of cognitive development (p. 62).

The innateness interpretation of the semantic connections just mentioned induces Chomsky to argue that

one of the central conclusions of modern philosophy is rather dubious: namely, the contention – often held to have been established by work of Quine and others – that one can make no principled distinction between questions of fact and questions of meaning, that it is a matter of more or less deeply held belief. This conclusion has been supported by reflection on an artificially narrow class of examples; among them concepts that have little or no relational structure. In the case of such sentences as ‘cats are animals’ for example, it is not easy to find evidence to decide whether the sentence is true as a matter of meaning or fact, or whether there is an answer to the question in this case, and there has been much inconclusive controversy about the matter. When we turn to concepts with an inherent relational structure such as *persuade* or *chase*, or to more complex syntactic constructions such as those exhibiting referential dependence or causative and relative constructions, then it seems that semantic connections are readily discerned (p. 63).

The innateness perspective is *necessary* to enable Chomsky to defend the analytic-synthetic distinction from Quine's criticism. Indeed, the fact that we are able to identify some truths of meaning in natural language *does not constitute* a sufficient reason to reject Quine's criticism: although his purpose was to show "that there was no truths that are both immune from revision based on experience and directly accessible to the linguistically informed mind" (Marconi, 1997, p. 33), Quine himself admitted that some sentences are trivial cases of analyticity, as Putnam (1975a) had already noticed. Thus, Quine (1986, p. 208) argued that it was possible to maintain a "humbler" notion of analyticity, restricted to the domain of "empirical semantics". He observed that there are sentences "that we learn to recognize as true in the very process of learning one or another of the component words": among them, we find such sentences as 'Bachelors are unmarried', and logical words ('if', 'or', etc.). Quine concludes that "some truths are learned by learning words", and this is the "worthwhile insight" that makes up the only content of the notion of analyticity as "an intelligible and reasonable" notion (pp. 94-95) (see Marconi, 1997, pp. 33-34 for discussion). Thus, to point out, as Chomsky does, that we have intuitive knowledge of some truths and semantic relations is not a sufficient reason to prefer the innateness hypothesis to other explanations; an equally plausible hypothesis is that our intuitive knowledge is determined by the fact that such truths and connections "are learned by learning words" (perhaps, this is not true for referential dependence relations, that, as such, belong however to the domain of syntax). Therefore the innateness hypothesis is not the only possible (the best) explanation of why some analytic sentences (expressing truths of meaning) hold in natural language; it is instead a necessary assumption to justify the existence of "*not humbler*" analytic sentences. Arguing that analytic truths (truths of meaning) are determined by innate conceptual schemas allows saving the notion of analytic truth as it was interpreted by logical positivists. Indeed, logical empiricists identified analytic sentences "with (a) necessary truths, (b) a priori truths, (c) unrevisable pieces of knowledge, and (d) sentences constitutive of (lexical) semantic competence" (Marconi, 1997, p. 30). It is clear that these conditions are satisfied by those sentences that are taken to reflect innate conceptual relations.

The notion of analyticity advocated by logical positivists has been criticized not only by Quine. Kripke (1980) has shown that (a) and (b) do not extensionally coincide, and Putnam (1975a) has pointed out that the same is true in the case of (c) and (d): for example, 'Cats are animals' is part of lexical semantic competence, but is revisable, while '37 is the thirteenth prime number' is unrevisable but is not part of the lexical semantic competence of a common speaker (see Putnam's linguistic labor division theory: Putnam, 1975b). Although it is not relevant here, Chomsky's judgment of Putnam's theory can be summarized as follows: roughly, according to Chomsky, Putnam's conclusions are beyond linguistic theory, namely they do not belong to the naturalistic investigation of language. Chomsky supports this criticism pointing out that the notions Putnam uses (such as that of linguistic community, of rule, etc.) are common sense notions and they are not scientific nor technical. Let's now consider Chomsky's criticism to Kripke.

2. In *Naming and Necessity* Kripke shows that a priori truths and necessary truths not always coincide. Thus, he distinguishes the epistemic level (a priori vs. a posteriori) from the metaphysical level (necessary vs. contingent): in this perspective, we can distinguish between *a priori necessary truths* (i.e., 'Hesperus is Hesperus') and *a posteriori necessary truths* (i.e., 'Hesperus is Phosphorus', under the theory of rigid-designation for proper names). Among the latter, we can include those truths which depend on the essential properties of the objects, namely on the properties that objects necessarily possess in virtue of their metaphysical essence (see Casalegno, 1997, pp. 237-238). Kripke provides some examples of essential

properties: if an individual is a human being in the actual world, then she is a human being in all possible worlds. Thus, if we consider Richard Nixon, we can assume that there are possible worlds where he did not win the 1969 elections, but there is no possible world where he is not a human being; furthermore, since being a human being necessarily entails being an animate object, then we cannot imagine a world where Nixon is a human being but is not an animate object:

If we can't imagine a possible world in which Nixon doesn't have a certain property, then it's a necessary condition of someone being Nixon. Or a necessary property of Nixon that he [has] that property. For example, supposing Nixon is in fact a human being, it would seem that we cannot think of a possible counterfactual situation in which he was, say, an inanimate object; perhaps it is not even possible for him not to have been a human being. Then it will be a necessary fact about Nixon that in all possible worlds where he exists at all, he is human or anyway he is not an inanimate object (Kripke, 1980, p. 45).

Kripke's hypothesis is based on the notion of conceivability. According to Kripke, conceivability corresponds to logical possibility; thus, if I cannot imagine a world where Nixon, *this very person*, is not a human being, then it is logically impossible for Nixon not to be a human being, namely he is necessarily a human being. If this is so, then 'Nixon is a human being' is a necessary a posteriori truth.

In *Reflections on Language* (but see also Chomsky, 2000, pp. 60-61), Chomsky argues that the notion of essential properties can be grounded in the connections holding within the common-sense understanding and the language system:

The necessity of this statement ['the person Nixon is an animate object'] follows without any attribution of necessary properties to individuals apart from their designation. [...] The necessary truth of [this statement] is a consequence of the necessary truth of the statement that people are animate objects. This necessary truth may be grounded in a necessary connection between categories of common-sense understanding, or an analytic connection between the linguistic term "person" and "animate". Under any of these assumptions, we need not suppose that an essential property is assigned to an individual, Nixon, apart from the way he is named or the category of common-sense understanding to which he is assigned (Chomsky, 1975, p. 47).

This kind of explanation is used by Chomsky to discuss another example of essential property that Kripke advocates. In *Naming and Necessity*, Kripke argues that an essential property of objects is their material origin: "if a material objects has its origin from a certain hunk of matter, it could not have its origin in any other matter" (p. 114, fn. 56). A consequence of this stipulation, Kripke says, is that it is not possible to imagine a world where an individual has parents other than her actual ones. In other words, an individual would not be the same person if she had different parents. For example, it is not possible to imagine a world where Queen Elizabeth II, *that person*, is not the daughter of George VI and Elizabeth Bowes-Lyon. Chomsky criticizes Kripke's argument in two ways. Firstly, he highlights that such intuitions can differ from speaker to speaker:

My own intuition differs about [this] example. Thus, it does not seem to me that a logical problem would arise if Queen Elizabeth II were to write a fictionalized autobiography in which she, *this very person*, had different parents; we might, I think,

take this as a description of the history of this person in a different “possible world” a description of a possible state of this world with the very objects that appear in it (Chomsky, 1975, p. 48).

Secondly, he argues that *even if we assumed* that having specific parents is an essential properties of the Queen, then anyway this stipulation would derive from our categorization and designation of the entity in the systems of common-sense understanding:

But suppose that it is not so, and that having a particular origin is an “essential property”. Is it, then, an essential property of the thing itself, apart from its designation or categorization in common-sense understanding? I think not. We name the entity with a personal name, “Queen Elizabeth II”. We assign it to a category of common-sense understanding, Person. It might be [...] that an object taken to be a person could not be the same person if it had parents other than its own. If so, this is a property of the conceptual system of common-sense understanding, and perhaps also of the related system of language; it is a property of the concept Person. Given the cognitive structure, we can distinguish necessary and contingent properties. We can distinguish between what might have been true of an object categorized and designated within these systems, and what could not have been otherwise. The intuitive force of the argument for essential properties seems to derive from the system of language in which the name is placed and the system of common-sense understanding, with its structure, in which the object is located (Chomsky, 1975, p. 49).

The notion of common-sense understanding was used by Chomsky in the 1970s and 1980s to denote the cognitive systems interacting with the mental organ of faculty of language (which is responsible for language acquisition). This is the definition of common-sense understanding provided in *Rules and Representations*:

One basic element of what is loosely called “knowledge of language” [...] is knowledge of grammar, now analyzed in terms of a certain structure and rules, principles and representations in the mind. This grammar generates paired representations of sound and meaning, along with much else. It thus provides at least partial knowledge of sound-meaning relations. A fuller account of knowledge of language will consider the interactions of grammar and other cognitive systems, specially, the systems of conceptual structures and pragmatic competence, and perhaps others, for example, systems of knowledge and belief that enter into what we might call “common sense understanding” (Chomsky, 1980, p. 92).

It is reasonable to interpret common sense understanding as including the innate conceptual systems plus other systems that process extralinguistic knowledge, such as beliefs, assumptions about the world, intentions, and others. We can track the same idea in later works, in the claim that the generative procedure of the faculty of language generates structural descriptions that are mapped to the articulatory-perceptual systems and to the conceptual-*intentional* systems, where these latter systems include not only the conceptual system, but also other cognitive systems, whatever may be, which process extralinguistic factors such as beliefs, etc. (see Chomsky, 2000, 2007, 2008). Thus, the conceptual-intentional systems are taken to be responsible both for the semantic interpretation and for the pragmatic one. Now, Chomsky is perhaps right in saying that no logical problem arises when we imagine the counterfactual situation where the Queen, this very person, has different parents: assuming

that conceivability corresponds to logical possibility, if we can imagine that (conceive the situation where) the Queen has different parents, then it is *a fortiori* logically possible that she has different parents (thus, no logical problem arises, as Chomsky states). This objection is relevant for Kripke's theory, and deals with the problematic relation between conceivability and possibility, a well-known topic in philosophy (see Gendler & Hawthorne, 2002). Chomsky's objection is useful to highlight a problematic assumption of Kripke's theory, namely that we know *a priori* that a truth concerning an essential property is a necessary truth (if P concerns essential properties and P is true, then *a priori* $P \rightarrow \text{Nec } P$). Consider the way in which Marconi (2010, pp. 143-144) describes Kripke's theory:

For [Kripke], there are necessary features of the world that do not depend on our description of the world, but on the nature of things. As such, they need to be discovered by investigating nature [...]. They are, in this sense, *a posteriori*. More precisely, that the world has such features – for example, that salt is NaCl – can only be known *a posteriori*, if at all; whereas we know *a priori*, thanks to philosophical argument and, perhaps, intuition, that such features are necessary features (that salt is necessarily NaCl if it is NaCl at all).

[...] for Kripke some necessary facts cannot be known *a priori* for it cannot be known *a priori* that there are such facts. Once it is established that they are facts, it is indeed *a priori* that they are necessary: once we know the world has such and such features, it follows *a priori* that they are necessary features (' $p \rightarrow \text{Nec } p$ ' is *a priori*).

That said, a possible objection to Kripke (which is in a sense presupposed by Chomsky's objection) is that it is not sure that "philosophical argument(s)" and "intuition(s)" are sufficient to conclude that a truth concerning essential properties is a necessary truth. On the other hand, however, if we assume, as Chomsky seems to do, that the conceptual system is innate and, as such, common to all human beings (constitutional uniformity of individuals: see Graffi, 2001, p. 46), and if we assume moreover that our intuitions about essential properties are determined by the structure of the conceptual system, then we should reasonably conclude that our intuitions should be uniform across individuals and it should be impossible to have divergent judgments about essential properties and necessary *a posteriori* truths. This consequence is *not* taken into account, however, by Chomsky, who bases his criticism of Kripke on the fact that his intuition differs from Kripke's. This is my main objection to Chomsky's explanation of essential properties. Let's consider it.

Chomsky's words can be interpreted as stating that our intuitions about essential properties and necessary *a posteriori* truths are determined by the conceptual scheme and by other cognitive systems that are involved in our interpretation of language and world. Through this explanation, Chomsky seems to adhere to a "long philosophical tradition in modern philosophy, stemming from Kant" according to which "necessary features of the world are a by-product of our conceptual scheme (or schemes)" since "we regard as necessary what we could not experience, or conceive, or linguistically describe as being otherwise. Necessity does not inhere in the things themselves: it is projected onto them by us" (Marconi, 2010, p. 141). Kant (1787, p. 239) argued that the "categories of modality [...]" only express the relation of the concept to the faculty of knowledge": according to Kant, "to say that something is possible, or actual, or necessary amounts to saying that its concept bears a certain relation to the faculty of knowledge" (Marconi, 2010, p. 141). In particular, with respect to modality Kant said that "that which in its connection with the actual is determined in accordance with universal conditions of experience, is (that is, exists as) necessary" (Kant, 1787, p. 239).

This perspective was adopted also by the later Wittgenstein, who argued that necessity is

based on our “form of representation”. Philosophers endorsing this perspective did not deny that “there are necessary features of the world” (such as that necessarily every thing is identical to itself); they insisted on the fact that “the necessity of such features comes from how we experience, or linguistically describe, or conceptualize the world, not from the world itself” (Marconi, 2010, p. 141). Kripke stood against this tradition: according to him, necessary features are not determined by the structure of the conceptual scheme, but by the nature of things. Thus, some necessary truths, such as mathematical or analytic truths, are known a priori, while others are known a posteriori.

If we consider how Chomsky (2000, pp. 41-42) discusses Kripke’s intuition that “Nixon would be the same person if he had not been elected President of the USA in 1968, while he would not be the same person if he were not a person at all”, it is clear that Chomsky follows in a sense the Kantian tradition: “doubtless there is an intuitive difference” between these intuitions, but “that follows from the fact that Nixon is a personal name, offering a way of referring to Nixon as a person; it has no metaphysical significance”. Indeed, “if we abstract from the perspective provided by natural language, which appears to have no pure names in the logician’s sense”, then “intuitions collapse”.

The problem in Chomsky’s explanation can be understood by considering how Chomsky explains why we are prepared to say that Nixon would not be the same person if he was not a human being, while he would be if he had not won the 1969 elections. Chomsky writes that the “necessary truth” of this statement “is a consequence of the necessary truth of the statement that people are animate objects. This necessary truth may be grounded in a necessary connection between categories of common-sense understanding, or an analytic connection between the linguistic term ‘person’ and ‘animate’” (Chomsky, 1975, p. 47).

Now, if our judgments about necessary truths are determined by *necessary* connections inside the categories of common-sense understanding (reflected in connections inside the language system), then our judgments should be a priori, and, as such, uniformly shared by all speakers: if speakers had divergent judgments about an allegedly necessary truth, this would entail that such truth is in fact not necessary. Thus, when Chomsky notices how his own intuition about the property of having certain parents differs from Kripke’s, he should conclude that this property cannot be an essential property; *instead*, he argues that if we assume, contrarily to his own intuition (“but suppose that it is not so”), that having specific parents is an essential property, then this intuition should be explained by focusing on the structure of “the conceptual system of common-sense understanding”.

Perhaps, one way to respond to this criticism is to argue that the innateness character of the conceptual system does not entail a priori knowledge of necessary features: the necessary features we associate to an entity depend on *how we decide* to conceptualize that entity (assuming that many conceptual systems are available). For example, the fact that we decide to categorize the Queen in the conceptual category Person entails that we attribute to the Queen specific essential properties (such as that of being a human being, an animate object, or of having specific parents, etc.). This reply is in line with Chomsky’s idea that our conceptualization of the world depends on a wide range of factors, such as intentions, beliefs, assumptions, and others. Chomsky has often advocated this perspective, especially in his discussions concerning the notions of nameable object and of reference.

There are complex conditions – poorly understood, though illustrative examples are not hard to find – that an entity must satisfy to qualify as a “naturally nameable” thing: these conditions include spatiotemporal contiguity, *Gestalt* qualities, functions within the space of human actions (Chomsky, 1975, p. 43).

The object in front of me is not essentially a desk or a table; that very object could be any number of different things, as interests, functions, intentions of the inventors, etc. vary (Chomsky, 2000, p. 42; see also p. 127).

At the same time, however, this reply does not really solve the problem I have put forward in this paper: if the fact that we attribute to the Queen certain essential properties depends on the fact that we categorize the entity Queen as falling under the concept of Person, and if the concept Person, being part of an innate conceptual structure, is necessarily related to other concepts (being a human being, etc.), then our intuitions should *not* differ. But, as Chomsky reminds us as he discusses Kripke's example, they do. The only way to justify (from Chomsky's perspective) Chomsky and Kripke's divergent intuitions about the property of having specific parents would be to assume that one categorizes the Queen with the concept Person, while the other does not; but it is plausible to assume that they both recognize that the Queen, although a Queen, is a person. In order to resist such a conclusion (namely, that Chomsky and Kripke categorize differently the Queen), one should assume that the conceptual system is only *one of the many factors*, not *the only factor*, involved in categorization and the divergence in speakers' intuitions would then be attributed to differences in intentions, beliefs, etc.

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