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# Arguing about innateness*

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ABSTRACT

This paper lays out the components of a language acquisition model, the interconnections among the components, and the differing stances of nativism and empiricism about syntax. After demonstrating that parsimony cannot decide between the two stances, the paper analyzes nine examples of evidence that have been used to argue for or against nativism, concluding that most pieces of evidence are either irrelevant or suggest that language is special but need not invoke innate ideas. Two pieces of evidence – the development of home sign languages and the acquisition of Determiners – do show not just that language is special but that the child has innate syntactic content. The existential claim that nativism makes – there is at least one innate syntactic idea – is an easier claim to verify than the universal claim that empiricism makes – there are no innate syntactic ideas.

## INTRODUCTION

Models of syntax acquisition have to specify (i) the content of the initial state, or the child's innate endowment; (ii) the content of the final state, or the adult's syntactic knowledge; (iii) the mechanism that gets the learner from the initial to the final state; and (iv) the role of input in that process. The components are interdependent: how one specifies one component has implications for how one specifies the others. This paper concentrates on arguments that have been used for or against positing syntactic innate ideas, but starts by considering how the components work together. Evaluations of a model's success have to take into account interactions with other language and cognitive systems that might affect the child's

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ability to demonstrate her knowledge, psychological plausibility, and other factors.

It may seem surprising to include a role in a model of syntax acquisition for the adult's syntactic knowledge. But it is necessary. If one thought (as no one does) that the adult's knowledge of a language consisted only of the set of sentences that she had heard or produced, one would not need to postulate any innate syntactic endowment. Nothing syntactic would be acquired, so nothing syntactic would potentially have to be built into the model.

If one thought, as some do (e.g. Goldberg, 2013; see Adger, 2013, for criticism), that the final state is based on linguistic constructions and is not very abstract, one would not need to postulate much by way of innate syntactic endowment. According to constructionism, children acquire (and adults' syntactic knowledge consists of) pairings of forms and meanings for constructions in the same way that they acquire pairings of forms and meanings for individual lexical items. The same processes are involved in learning how to form questions as, say, are involved in learning the connection between a word and its meaning. In particular, there is no derivation or structure that is associated with a sentence. Constructions are related to each other in a network fashion, similar to the way that words are related to each other. Constructionism as a theory of grammar is thus assumed by constructivists, or usage-based proponents of how acquisition takes place (e.g. Abbot-Smith & Tomasello, 2006; Bannard & Lieven, 2012; Bybee, 2010; Tomasello, 2008). Since little of an abstract nature is acquired, no syntax of an abstract nature needs to be proposed as innate.

Finally, if one thought (e.g. Valian, 2009a) that the adult's syntactic knowledge required an abstract grammar to capture it, with hierarchical representation, in the generative grammar tradition (e.g. Government and Binding Theory, Principles and Parameters Theory, Minimalism), and if one thought that models of knowledge acquisition cannot get something from nothing, at least some syntax of an abstract nature will be proposed as innate.

Differing views about the nature of the child's innate syntax thus cannot be compared in isolation from views about the child's eventual accomplishment. If two researchers are not trying to explain the same outcome, we cannot meaningfully compare what they have to say about the starting point.

Nativism – the doctrine that there are innate ideas – contrasts with empiricism – the doctrine that there is no innate content and that everything is learned through experience. It is possible to be a nativist or empiricist in some domains but not others. My focus here is on syntax, so I am contrasting SYNTACTIC nativism and SYNTACTIC empiricism.



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Researchers who are empiricist with respect to syntax could be (and often are) nativist with respect to, for example, concepts.

One's view of the final state also has implications for the learning mechanisms that one proposes. Pattern learning and the learning of associations, for example, might suffice for learning constructions. For acquiring an abstract grammar, however, hypothesis-testing (a special form of which is parameter-setting) might be necessary in addition to pattern learning. Constructionists can also entertain hypothesis-testing as a mechanism, along with analogizing, but the nature of the hypotheses would differ from those the child would entertain in developing a generative-type grammar.

In addition to acquiring syntax, children acquire semantics, prosody, phonology, pragmatics, communicative skills, and concepts. Our observations of children are a search for a syntactic needle in a linguistic–cognitive haystack (Bencini & Valian, 2008; Valian, 2013). Since all experiments impose cognitive and executive function demands on children (e.g. attending to the experimenter, following directions, understanding the task, keeping on task, inhibiting extraneous stimuli), we run the risk of underestimating or mischaracterizing children's syntactic knowledge (for a somewhat similar point, see, e.g. Crain & Thornton, 2000). Similarly, observation of spontaneous speech has to factor out communicative demands, conceptual planning of responses, and attention to activities other than speaking, and has to acquire enough data per child and across children to ensure that findings are not an artifact of small samples (Valian, Solt & Stewart, 2009).

If there is innate syntactic content, what might it be? Linguistic universals, both formal and substantive, are good candidates (Valian, 2009b). A possible example of a formal universal is X-bar syntax and the claim that all branching in a tree structure is binary. That is a restriction on the form that grammars can take. To take an oversimplified example, a Determiner Phrase can branch into a Determiner and a Noun Phrase, but not directly into a Determiner, Adjective Phrase, and Noun Phrase. To accommodate an Adjective Phrase, there will be an intervening level of structure. (For discussion of cartography, see Shlonsky, 2010; for a formal summary of Minimalism, including binary branching, see Collins & Stabler, 2011.)

Examples of substantive universals are syntactic categories such as Noun, Verb, Preposition, and Determiner, and syntactic features such as Tense, Number, and Gender. Not all universals need be innate (though linguists typically suppose that they are), but universals are the best candidates for what might be innate. One further note about syntactic categories and features is that not every language need use every category and feature. Chinese, for example, not only does not express Tense overtly in the morphology, but may also not have a syntactic representation of Tense.



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A key characteristic of grammars is that their parts are interdependent. Syntactic categories do not stand alone. They are heads of phrases (Nouns are the heads of Noun Phrases, Verbs are the heads of Verb Phrases, and so on). There are restrictions on how categories can combine. Determiners can take Noun Phrases as their complements, but not Verb Phrases. There is no way to talk about the syntax of Determiners except via their role in a system of other syntactic categories. An element is not a Determiner if anything in the world can be combined with it.

## ARE NATIVIST EXPLANATIONS UNPARSIMONIOUS?

As I indicated earlier, two theories can only be meaningfully compared if they are theories of the same domain. If nativists see knowledge of the case filter as in the domain of linguistic achievements that needs to be accounted for (Valian, 2009a), and empiricists do not, those nativist and empiricist theories cannot be compared with respect to simplicity. Nativists posit innate content that empiricists do not, and empiricists require an as-yet-unspecified set of mechanisms that will take the child from nothing (syntactically speaking) to something.

For empiricists, the child starts with nothing but observation of details and CREATES abstract structures and categories. The nature of that creation process has only been broadly characterized (e.g. Abbot-Smith & Tomasello, 2006). For nativists, the child is born with abstract categories and learns details about how those categories behave in her target language. The learning problem is a two-way MAPPING problem: How does the child map the words she hears onto the categories she has; how does she map the categories she has onto the words she hears?

The claim that nativist theories are unparsimonious presupposes that we already know that there is no innate syntactic content. If there is an issue yet to be resolved, then we are not in a position to know whether positing innate content is unparsimonious. A similar claim to lack of parsimony is that innate content is redundant: the child already has all the mechanisms and concepts it needs from other domains to acquire syntax. This, too, presupposes a demonstration that does not yet exist: that the child has used knowledge and processes from non-syntactic domains to acquire syntax.

## WHAT ARGUMENTS BEAR ON NATIVIST CLAIMS ABOUT SYNTAX?

My focus here is empirical evidence – or the lack thereof – that has been used to argue for or against syntactic nativism. In one way of thinking about syntactic nativism (which I will sometimes call linguistic nativism), we consider whether language is in some sense 'special' – different from other cognitive systems. Empirical arguments that language is special highlight the human predisposition to learn language without specifying what



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content might be innate or exactly how language is special. Empirical arguments that language is not special highlight commonalities between humans and other species, or between linguistic concepts and other concepts, or between mechanisms of learning language and learning in other domains.

In the second way of thinking about syntactic nativism, the question is whether there is any innate syntactic content or whether language is solely derived from a combination of non-syntactic innate content plus input.

*1. Children's early speech includes formulae*

Let us assume that the claim about formulae is true: there are at least SOME formulae in early child speech, although there is no evidence that even very early child speech consists entirely of formulae. Formulae could be either rote expressions or expressions that allow some limited productivity, as in *Where's the X*? or *See X* (Braine, 1963; Pine & Lieven, 1997). Does the existence of formulae bear on whether there is innate syntactic content? No. Adults use formulae, too, and, at least with respect to Determiners, parents use formulae to the same extent that two-year-olds do (Valian *et al*., 2009). If formulae are a characteristic of fully competent speakers' productions, their existence in the speech of young children is neither here nor there. Further, Valian *et al*., found that the least advanced two-year-olds actually use formulae involving Determiners LESS than adults do. Even when formulae were removed from consideration, children and adults showed the same productive flexibility in using Determiners with Nouns.

*2. There are effects of frequency*

Expressions that are more frequent in adult speech also tend to be more frequent expressions in the speech of the children that the adults are talking to. But frequency effects are ubiquitous in the speech of fully competent adults as well as neophyte children. Frequency effects are also inconsistent and limited. Children produce structures they have never heard.

One likely reason for frequency effects is priming. Adults as well as children show syntactic priming effects in which they reuse a syntactic structure to which they have been exposed (as first shown for adults by Bock, 1986; Levelt & Kelter, 1982; Weiner & Labov, 1983; for review, see Branigan, 2007). All speakers, experienced or tyro, use structures to which they have recently been exposed – if they can syntactically represent the structure. Syntactic priming is used by researchers to detect whether a speaker's grammar has abstract representations of infrequently used structures like the passive. Even three-year-olds, who do not produce and seldom hear passives, produce them when primed (Bencini & Valian,



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2009). Thus, frequency effects, like the existence of formulae, are neither here nor there.

*3. The input is 'rich'*

I put 'rich' in quotes because 'richness' is in the ear of the beholder. For organisms with a grammar, the input is incredibly rich: it contains examples of all syntactic features and categories, it reveals connections between word order and semantic roles; it at least indirectly illustrates various principles of grammar such as those that determine when it is grammatical to use a reflexive pronoun. But for organisms that will never acquire a grammar, like dogs, the input is not rich at all. The presence of rich input would only be relevant if it could compensate for lack of innate content. Infrahuman primates like bonobos can make use of some sound–meaning correspondences for lexical items but they never develop syntax.

*4. Children's productivity is limited in ways that adults' productivity is not*

Children's productivity is largely limited to their being able to fill in low-level formulaic slots with fillers (e.g. Pine & Lieven, 1997). This, I will argue, is factually incorrect with respect to Determiners, the category that has been most intensively studied. Even if children's productivity is limited, however, that is insufficient to demonstrate that empiricism is correct. Since the child's syntactic system interacts with, and is limited by, other components of nascent language and cognition, it would be surprising if children's productivity were not limited compared to adults'.

*5. There is no known gene (or set of genes) for language or any component of language*

The absence of a clear and direct connection between genes and language is irrelevant to judging nativist claims. Consider first the KE family, which has a mutation in just one gene, *FOX2P*, involving one nucleotide change (for reviews, see Marcus & Fisher, 2003; Fisher & Marcus, 2006). The KE family shows deficits in tests of syntax comprehension and production, as well as having difficulties distinguishing words from non-words. Indeed, the latter difference alone can distinguish affected and unaffected family members (Watkins, Dronkers & Vargha-Khadem, 2002). Affected individuals also have some cognitive and motor difficulties. Finally, the *FOX2P* gene is found in a number of species and, even in humans, is related to lung and other organ functions as well as cognitive function.

But let us imagine that, counter-factually, there is a gene that is associated only with the accurate production of the past tense. That would still not be an argument for innateness of tense. That gene might control something else



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that makes it impossible to acquire tense. Nor does the lack of a 1:1 correspondence between the expression of a particular gene and the expression of a particular aspect of syntax have a bearing on whether that aspect of syntax is innate.

Complex traits are not controlled by single genes (Risch, 2000). "At least 40 loci have been associated with human height, a classic complex trait with an estimated heritability of about 80%, yet they explain only about 5% of phenotypic variance despite studies of tens of thousands of people" (Manolio *et al*., 2009). But when 295,000 single-nucleotide polymorphisms (SNPs) are considered simultaneously, they explain about 45% of the variance in height (Yang *et al*., 2010). Maybe height is more complicated than the past tense, but the search for A gene, or a simple set of genes, that controls different aspects of syntax is not a fruitful enterprise.

*6. The ability to speak and understand language is species-specific*

If no special innate endowment were required for acquiring language, then any two species with identical abilities to learn and remember information and with identical repertories of cognitive concepts should be able to acquire language on the basis of the input provided. It is necessary to ensure that both species have the same concepts because some aspects of language may be inaccessible without certain concepts. For example, although syntactic tense is not equivalent to time (the present tense can be used to talk about the past, about ongoing events, about the future, and about timeless events), a concept of time may be necessary for acquiring tense. If one of the two species is nevertheless unable to acquire tense, we have an argument for innate content (if only for the notion of tense). If we are genuinely able to keep everything else constant, the remaining causal factor to explain the absence of syntax in infrahumans must be the presence (in humans) or absence (in infrahumans) of innate syntactic content.

This argument is inconclusive because it is impossible to be certain that we have kept everything else constant. Bonobos and humans, for example, could have highly similar learning abilities and similar cognition but differ in subtle ways that are relevant to language. Because arguments for innate content based on cross-species differences crucially rely on the assumption of cross-species similarity of the non-linguistic systems and of learning mechanisms, the arguments are at best suggestive. Even the smartest non-human primates are very different from humans and are unable to learn many things that humans learn. We can never be certain that we are dealing with different innate syntactic content rather than different concepts in other domains or different learning mechanisms.



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Notice further that the species-specificity argument only works in one direction. Imagine that we discover a species that is indistinguishable from humans in its ability to acquire language (Abe & Watanabe, 2011, for example, have claimed that passerine birds are capable of responding to hierarchical structure). Such a finding would be compatible with nativism. We would only have discovered another species that had the same innate linguistic content as humans. Thus, species-specificity is suggestive but not definitive.

*7. Language acquisition has a cut-off point*

Although the data are not decisive, it seems that, sometime during puberty the ability to acquire a language as a native language wanes dramatically. Let us assume for the sake of argument that the data in humans are as decisive as the data in some bird species (Brainard & Doupe, 2013) and that there is a 'critical period', or at least a 'sensitive period', for language acquisition. If a child is not exposed to a language before the critical period ends, she or he will not fully acquire a natural language (as was the case for Genie, for example; Curtiss, Fromkin, Krashen, Rigler & Rigler, 1974). If a child is exposed to a second language after the critical period ends, she or he will never fully acquire that language.

Facts about critical or sensitive periods are neither here nor there for innate syntax. A critical period demonstrates that there is some innately specified schedule to learning within a particular domain. It does not demonstrate that there are innate concepts for that domain. Consider the fact that there is a critical period for bonobos as well (Rumbaugh & Savage-Rumbaugh, 1996; Savage-Rumbaugh, Murphy, Sevcik, Brakke, Williams, & Rumbaugh, 1993). Apes introduced to language before age 2;6 seemed to learn at least some sound–meaning pairings almost effortlessly, while those introduced to symbols after that age required specific tuition and never reached the level of those apes who were exposed early in life.

If we assume that bonobos do not have the hallmarks of language (Valian, 2009b), we can see the irrelevance of age-limited learning for nativism. Processes may be time-limited without entailing that the concepts those processes draw on are innate. Chess (Gobet & Campitelli, 2007) and go masters, to take another example, almost uniformly start playing at a very young age and starting age is important independent of amount of practice (Gobet & Camptelli, 2007). Ballet dancers cannot start dancing at age eighteen and hope to be principal dancers. All of those activities are 'special', but nothing about them entails any innate ideas.

Now consider the converse. If language learning continued at a high level throughout the lifespan, that would not imply the absence of



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innate concepts. It could simply mean that innate concepts were indefinitely available as a basis for learning. Critical periods are irrelevant to nativism.

*8. Language learning is largely independent from cognition*

Children with high scores on intelligence tests do not appear to learn basic syntax more quickly than children with average scores. Further, variables such as socioeconomic status (SES), which are related to performance on intelligence tests, do not appear relevant to syntax acquisition (although SES does correlate with scores on some more advanced tests of language skill, Farah *et al*., 2006, and with vocabulary, Hart & Risley, 1995). One interpretation of such purported facts is that all children are born with the same abstract syntactic concepts. Children's rich stock of innate linguistic universals allows them to learn language in the same way and at the same rate despite enormous differences in their life circumstances, the type of input they receive, and even despite having various cognitive deficits. On a gross level, children seem to acquire language at about the same speed, although their ability to access their knowledge shows more variation. But even a cursory examination of different children's transcripts shows that some children rarely show errors of a particular type whereas others have frequent errors of that same type; some children seem to zip through acquisition whereas others show a more protracted course of development (e.g. Adam vs. Sarah; Brown, 1973).

Language development in children who have different forms of retardation, such as Down syndrome or Williams syndrome, is an interesting test case. Children with Williams syndrome are profoundly retarded conceptually. Although their language is imperfect, it is relatively intact compared to their conceptual repertoire (Grant, Valian & Karmiloff-Smith, 2002; Thomas & Karmiloff-Smith, 2005). Such data suggest that the language-learning function can to some degree operate independently of cognition. On the nativist interpretation of such data, the child has innate linguistic concepts that are spared by the cognitive deficit, though those concepts may not be accessible as early in development in individuals with Williams syndrome as in typically developing children (Thomas & Karmiloff-Smith, 2005). Those innate concepts allow syntax acquisition to take place relatively normally.

But the independence of language from cognition is susceptible to empiricist interpretations. One possibility is that the various cognitive concepts that are necessary and sufficient for language learning are freely accessible for language but not for other cognitive domains. Although this seems unlikely, it is possible. An analogy would be a city that normally has several roads into it. Due to a disaster, all but one road is destroyed. The city is still there, intact, but only vehicles traveling down the



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remaining road – the language road – are able to reach it. Another possibility is that the child has special learning mechanisms for language that are not shared with general cognition. That, too, seems unlikely, but possible.

Now consider the reverse: language acquisition IS correlated with intelligence test performance and socioeconomic status. We could not conclude from that that children lack innate linguistic concepts. Rather, such correlations might reflect the fact that higher general intelligence, and greater possession of factors that contribute to it, make access to innate syntax easier.

*9. Language is typically localized in particular brain areas*

Although this fact has not been recruited to argue that language is innate, it has been used to argue that language is special. It is obvious that localization of function does not imply the existence of innate linguistic concepts; any concept might be localized without being innate. Conversely, if language function were spread out across the brain, that would carry no implications for the presence of innate concepts.

## IS THERE ANY GOOD EMPIRICAL EVIDENCE FOR INNATE SYNTACTIC IDEAS?

*1. Children create language*

The creation of home sign systems by deaf children of hearing parents (Goldin-Meadow, 2005), and the development of Nicaraguan Sign Language (NSL; Senghas, Senghas & Pyers, 2005), unlike the other examples I have discussed, do demonstrate syntactic content in the absence of experience. In both cases, children have not been exposed to a natural language in a natural way. In the case of home sign, there is some suggestion that at least one child has hierarchical structure and combines signs representing demonstratives with signs representing Nouns into a complex phrase (Hunsicker & Goldin-Meadow, 2012). Similarly, in NSL, over the years since the development of a deaf community, speakers have created devices that are similar to those used in sign languages, such as separating the gestures used to express path and manner, unlike hearing individuals, who gesture by combining path and manner.

Unlike the previous facts adduced to argue for or against nativism, the evidence from created languages is bidirectional. Most of the empirical evidence marshaled in favor of nativism is only suggestive, but the creation of language by those deprived of input is solid evidence in favor of nativism. The fact that children do create language (or in the case of home sign, a communication system with some signal hallmarks of language) in the absence of experience argues for innate content. And if



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the communicative devices that children created in the absence of input did not resemble natural languages, that would be evidence against nativism.

We know something about how language develops from the research on NSL. Most importantly, we know that children cannot leap from no language to a full language. Successive cohorts of NSL users developed more and more sophisticated syntactic devices (Senghas *et al*., 2005), and the development of the language may still be ongoing. The increasing richness of syntactic devices is not, however, due to exposure to a fully developed language but due to exposure to a partially developed language. Learners continue to build the language on their own but need language-like input to do so.

## 2. *Acquisition of the Determiner category*

One limitation of the investigation of home sign and developing sign languages is that the target is undefined. We have no way of specifying what the endpoint will be because there is as yet no endpoint. In home sign and NSL, the role of input cannot easily be assessed. In normal acquisition, there is an endpoint. It is possible to compare child learners with fully competent adult speakers to see how they differ. It is possible to assess the effects of input from the target. For example, we know that young children make two errors with *wh*-questions: they fail to supply an auxiliary when needed and they fail to invert the auxiliary when they do supply the auxiliary. Estimates of errors rates vary widely, but those two error types are recognized. Children make those errors despite perfect input: adults never produce uninverted *wh*-questions. It is difficult even to characterize what an error is in home sign or NSL. Similarly, the basic category system of English, for example, is clear; the basic category system of home signs and NSL is not clear.

My focus here is on the form of the empirical argument for innateness of categories, Determiners in particular, rather than the specifics of our data (Valian *et al*., 2009) or challenges to our analyses (Pine, Freudenthal, Krajewski & Gobet, 2013). By studying the acquisition of syntactic categories that researchers widely agree is a feature of adult grammars, it is possible to map out a developmental trajectory for children and determine whether, at any point, the child appears to be using limited-scope formulae or whether her language behavior appears to continuously make use of abstract categories.

Work in my laboratory has examined the corpora of twenty-one English-speaking two-year-olds to establish whether children's early use of Determiners is better characterized as abstract from the outset of combinatorial speech or as based on low-level formulae (Valian *et al*., 2009). Using a variety of tests, we discovered that children used their



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Determiners with a variety of Nouns to the same extent that their parents did. Other than using Determiners less often than their parents did, and knowing fewer Determiners than their parents knew, their behavior with the Determiners they did have was as flexible as their parents'.

We concluded that previous failures to find similarities between child and parent in flexibility and productivity were due to small sample size. The more opportunity children had to display flexibility – by using a Noun with a Determiner multiple times – the more flexibility and productivity children displayed. The limitations were in the researchers' data, not in the children. The production data suggest that children have the category Determiner as soon as combinatorial speech begins. Even before combinatorial speech, infants use Determiners as markers for Nouns, have an equivalence class for Determiners, and do not initially mark details about Determiners (for fuller presentation, see Valian, 2009a, 2013). Children appear to continuously treat Determiners as abstract categories as early as we can measure and never look as if what they know are local details or limited scope formulae.

The argument thus has the following form. Choose an area of syntax where there is widespread agreement and where the involvement of semantics and reference is minimal: Determiners meet both criteria. Demonstrate that the child has flexible productive control in that area: assume that Valian *et al*. (2009) have successfully met that criterion. Examine the precursors of that category for evidence of early under-specification (because only abstract knowledge is present, hence an absence of details) and early evidence of an equivalence class: the infancy work demonstrates both properties. Examine all the data for any evidence of lexically specific or details-only representations: assume there is no such evidence. If all of those criteria are met, then we have good evidence for the innateness of Determiners.

We do not have a proof, because there are no proofs in empirical work. Instead, we have an inference to the best explanation. Given the assumed facts, the best explanation is that Determiners – in their skeletal, abstract form as functional categories that take NPs as their complement – are innate. What is learned is what counts as a Determiner in the child's target language and local details about the features of Determiners. *Some*, in English, can be used only with plural count Nouns and mass Nouns; *a* can only be used with singular Nouns; *the* can be used with any Noun. Those are facts that children have to learn.

## WHICH ARGUMENT IS HARDER TO MAKE?

The empiricist's claim is harder to verify than the nativist's. The empiricist makes a universal claim: there are NO examples of innate knowledge.



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Universal claims are very difficult to verify because they require that every possible example of innate knowledge be shown to be acquired solely on the basis of experience. The nativist, in contrast, makes an existential claim: there is at least one example of innate knowledge. Nativism is correct if ANY piece of syntax is innate. With one solid example, even if there is only one, nativism is established. If one piece of syntax is acknowledged, it is just a question of HOW MUCH syntax is innate, not WHETHER syntax is innate.

Thus, a lot hangs on whether the tiny Determiner is innate. If Determiners are acknowledged to be innate, that is it. One innate idea is the thin edge of the wedge. The argument about innateness of syntax is over. I have argued that there is good evidence for at least ONE innate idea – Determiners (Valian, 2009b; Valian *et al*., 2009; Valian, 2013). As I mentioned earlier, it is impossible to have Determiners without having Nouns, because part of the definition of Determiners is that they take Noun Phrases as their complement. *Après* Determiners, *le déluge*.

To sum up, most pieces of evidence nominally relevant to nativism are either irrelevant or show that language is special without showing that there are innate syntactic ideas. The interesting claim that nativism makes is that there are innate ideas, not simply that there are innate learning mechanisms. The creation of language by children who lack natural language input, and the demonstration that two-year-olds exposed to natural language input have Determiners in their grammar, are inference-to-the-best-explanation arguments in favor of innate syntactic ideas. Nativism is easier to argue for than empiricism because nativism makes an existential claim while empiricism makes a universal claim. If Determiners are innate, as I have argued, there are innate syntactic ideas.

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