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Abstract. This essay examines the alternatives of spontaneous order and central planning in the context of human language to cast new light both on the issues raised in the Socialist Calculation debate of the 1930s and 40s and on the nature of language itself. The evolution of the complex systems of rules that comprise natural languages is discussed, and the process of language acquisition in children is used to illustrate the problems involved in characterizing any spontaneous order as a social contract or convention. Natural language orders are distinguished from explicit contracts through the concept of a "language trap," in which an individual who voluntarily begins to participate in the order is gradually transformed by this participation and eventually becomes unable to leave it. A concluding section considers the implications of this trap and the pursuit of self-interest through language for attempts to construct and win adherents to artificial languages, and suggests the nature of the obstacles that confront any attempt to overcome or redirect the deeply rooted behaviors associated with spontaneous orders through the imposition of a central plan.

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1. Introduction

One important consequence of the great Socialist Calculation Debate of the 1930s and 40s has been to direct attention to the comparative virtues and deficiencies of decentralized processes of spontaneous order and hierarchical systems of central planning as alternative ways to organize the allocation of economic resources. Proponents of spontaneous order, following Mises (1935) and Hayek (1945), have emphasized the extraordinary capacity of competitive markets to extract essential information about preferences and costs from the minds of thousands or millions of individuals and put it to use in allocating resources efficiently. Given their conclusion that purposefully replicating this prodigious feat, and thus predicting or controlling the outcomes of the market order, is impossible, they have focused analysis on how the market produces the results that it does rather than on exactly what those results will be. In contrast, defenders of central planning, building on the work of Lange (1938) and Lerner (1944), have largely conceded the efficacy of the market order in discovering and processing the information needed to allocate efficiently, but found it wanting with respect to a second important value, producing an acceptably equitable distribution of resources. Accordingly, their efforts have been directed primarily at defining and justifying the objectives of the central plan, which may include efficient allocation without being limited to it, and devising institutions that, by appealing to self-interest or political commitment, will induce those who have the information the planners need to tell them what they know.[1]

But the specific terms of the debate have made it difficult to extend its arguments or apply its lessons to other problems of social organization. The debate's exclusive focus on the polar alternatives of perfectly atomistic markets and comprehensive state planning, for

example, ignores the obvious success of large private firms that operate as centrally planned economies and offers little insight into their ability to achieve the internal coordination and control necessary to pursue their objectives efficiently. Nor has sufficient attention been paid to the comparison of spontaneous order and central planning as organizational forms in areas of social life that lie beyond economics, narrowly defined. It has, to be sure, become commonplace for exponents of spontaneous order to identify the market as just one of a set of "invisible hand" processes that pervade social life and govern the development of money, systems of common law and morality, craft knowledge and natural languages.[2] But there is relatively little extended discussion of any of these other forms of spontaneous order, and almost none at all of language in particular.[3]

My purpose here is to revisit the alternatives of order and planning in the context of human language, both natural and artificial, and to shed new light on important questions about spontaneous social order in general and language in particular that lie at the interface of economics and philosophy. What language is, why the particular words and grammatical principles of any given language are what they are, and what lessons about other aspects of human existence can be learned from the study of language are, of course, questions that have fascinated scholars and lay people alike for centuries. Everyone speaks a language, and almost everyone's interest can be piqued by questions about it. I make no claim here to completeness, either in the questions I ask or the answers I propose to them. And though I have tried to draw on a broad range of sources, I am certain that much of what I will say has been said or contradicted, in one way or another, by others of whom I am not aware. But in viewing language afresh through the economic lens suggested by the calculation debate, I hope nonetheless to offer new insight, not just into language itself, but into more general problems of social organization as well.

2. Natural Language as Spontaneous Order

What strikes us most about the invisible hand is precisely its invisibility. At the end of a century marked by the ascendance of what Hayek (1967, p. 85) calls constructivism, we have become accustomed to thinking of order as the product of design, that social institutions are what they are because someone made them that way to serve some discernable purpose or interest. Some social forms, of course, are "constructed" in this sense; business firms and the various institutional components of the modern state are important examples of order by design. But others, among them some of the oldest, most complex and universal patterns of human behavior, are not. The long reign of constructivism in Western social science has largely driven the study of these spontaneous orders from the central place it enjoyed in the Scottish Enlightenment to the margins of contemporary scholarship. And this, in turn, has made it harder for us, not just to describe and analyze the operation of the invisible hand, but even to recognize it when we see it. Functional patterns of social order that emerge without design or the conscious intervention of authority are all around us, but as the example of language illustrates, it is sometimes difficult to characterize these orders with precision or to say just how they manifest themselves in the behavior of individuals.

What exactly do we mean when we speak of the English language, or the Japanese, or the several thousand other natural languages spoken on the earth? A useful first response

might be that each of them is a different way that human beings communicate with one another, a definition that, despite its informality, captures two essential properties of all such languages. First, its emphasis on communication makes clear that language is a social phenomenon. Alone on his island, Robinson Crusoe has no need of a spoken language at all. He is perfectly free to attach whatever verbal labels he likes, or none at all, to the things around him, and to change these labels whenever he wishes, without regard to the desires or expectations of anyone else. With no one to talk to, language is Crusoe's private domain; indeed, this very privateness, Wittgenstein maintained, made it impossible to describe such a system as language at all.[4] But conversation requires at least two people, and if information and ideas are to pass successfully between them, neither can enjoy the complete freedom of a Crusoe to invent a language exactly as he or she sees fit. Each must surrender a large measure or linguistic liberty and agree to express themselves only in words and sentences that convey roughly the same meaning to both. To understand and to be understood, speakers must tailor their expressive choices, and listeners their interpretive ones, to the existing knowledge and expectations of the other (cf. Lewis 1969, p. 177). In these continual, small acts of accommodation, they make their own behavior predictable and permit others to adjust theirs accordingly, so that all sides can benefit from the encounter.

This suggests the second point implicit in our tentative definition. Language is not just a way to communicate, but a way to cooperate as well, a device that people use to coordinate their behavior with one another so as to achieve some purpose. But to say only this, that the English language is a means to an end, a way of doing something, is to avoid the question at hand and raise other, harder ones. As it stands, our definition tells us not what the English language *is*, but what it is *for*, and it does even that with less than perfect clarity. If we see language only as a social phenomenon, we might say that the obvious purpose of any language is to enable people to communicate. But whose purpose is this, exactly? Though we are accustomed to speaking of Hindi or Arabic as "living languages," it is clear that this is just a metaphor. No language is really alive in the sense that even the simplest organisms found in nature are alive. But concepts such as purpose or desire clearly presuppose elements of consciousness, an ability to conceive of a state of the world that might exist in the future and an intention to bring that state about, that can exist only in creatures that really are alive in the biological sense. Living men and women, not societies or communities but individual human beings taken one at a time, plainly do have these powers of visualization and will, and use them to give purpose to their actions. Even the ambiguous notion that groups of people as such, workers, say, or Asian-Americans, have interests or purposes is, for all its conceptual difficulties, at least a familiar idea. But it is hard to see how we might meaningfully attribute purpose to the English language itself. Can we really say that a language, the intangible, inanimate creation of the people who use it, has a purpose of its own?

Perhaps so, in the same way that we sometimes say that a tool or a machine has a particular purpose, when what we really mean is that it was the purpose of the inventor who designed it, or the person who uses it, that it perform the specific task that it does. But the English language is not an invention, a consciously designed artifact created by some visionary genius for the purpose of enabling vast numbers of human beings to exchange ideas and information. It is the product of many minds and wills, all of whom use the tool of

language but none of whom alone has designed or created it.[5] Almost none of the hundreds of millions of people around the world who speak and hear the English language every day do so intending to tinker with this already intricate instrument of social order, or even to join the great community of communicators that forms around it. We are moved instead by personal, even selfish desire. We use the language for our own purposes, not in the service of some collectively defined objective, no matter how attractive such a purpose might seem when considered in the abstract.

Nor must these individual ends all be the same, or as straightforward as the basic desire to understand and be understood. We want not only to inform, but to influence behavior and change states of mind, to persuade, encourage, comfort, flatter, confuse, wound, touch, and deceive our listeners or ourselves. At times, consciously or unconsciously, we use the words we do, or say them in the way we do, to set ourselves apart from others or curry favor with them (Labov 1972, pp. 24–65). And, of course, we use language, as Hobbes (1958, p. 38) put it, "to please and delight ourselves, or others, by playing with our words, for pleasure or ornament, innocently." An elegant turn of phrase, a witty pun, an evocative simile, an allusion that invokes a shared memory or a special relationship between speaker and listener, all of these give pleasure in conversation well beyond the simple satisfaction of taking part in a successful transmission of information from one person to another. And yet, despite this profusion of individual, self-interested motives, none of which includes the larger purpose of creating a responsive, flexible instrument that enables a substantial part of the human race to speak and listen to one another, the continuous interaction over many generations of countless speakers and listeners in every part of the world achieves precisely this result, just as if it had been consciously designed to do so. No one means to create the language order itself, the complex, slowly changing pattern of verbal acts and responses we recognize as English being spoken, or intends that the greater end of human communication be served. No one need even be aware that it is being done. The apparent purpose of the creation is not the real purpose of any of its creators. It is this separation of the actual intentions of the individuals who take part in social life from the larger, often unperceived patterns of order created by their interaction that is the distinctive, characteristic feature of all spontaneous social orders.

What, then, is the English language? The idea of rational surrender of linguistic liberty contained in our tentative definition suggests the answer. It is a set of rules, hundreds of thousands of them. The great majority of these rules define words, assigning meaning to specific sounds uttered in particular sequences. The rest govern the ways that words may or may not be combined to convey messages; they distinguish meaningful sentences from gibberish. None of these rules is fixed in stone forever, and we may, in the proper circumstances, break any of them and still be speaking English. But as long as the rules are in force, we must routinely submit to them as both speakers and listeners or pay for our freedom by sacrificing the ability to communicate with others, whether we like the rules or not. The words of the conqueror's language burn the ears of the conquered, but they must still be heard and spoken if life is to go on. In this voluntary submission to the discipline of rules so that one's own ends can be realized, the language order is like a many-sided contract, a free exchange of behavioral obligations driven by the self-interest of those it binds and subject to their continuing consent. The delicate function of this

social contract is to produce regular, predictable patterns of verbal behavior that provide a reliable and efficient basis for communication, but not to bind us so closely that it frustrates the many purposes, expressive creativity, aesthetic pleasure, political influence, personal identification and more, that we bring to the language.

Suppose, for example, that I want to conjure up in your mind the image of a tail-wagging four-legged creature that barks. I am not free to make any sound that strikes my fancy and trust that you will, as it were, get the picture. Only a very few sounds will do. The most obvious is *dog*, although there are several equally general alternatives (*hound*, *pooch*, *cur*, *mutt*) and many other more precise ones (*schnauzer*, *spaniel*, *collie*, *mongrel*) that, despite the subtle shades of meaning conveyed by each, may serve just as well. Which of them I choose depends in large part on what I hope to accomplish by speaking to you. If it is urgent that I be instantly and clearly understood, I will probably forego my pretensions to art and choose a word that I think maximizes the likelihood that you will accurately receive the message I am trying to transmit (*That dog is about to attack you!*). And if, on hearing this sentence, you feel a similar urgency, you will gladly surrender your own, complementary freedom to explore whatever unintended but interesting or pleasurable connotations you may find in my words, take them exactly as I mean them to be taken, and act accordingly.

But if circumstances permit, and I am so inclined, I may try to do more with words than simply communicate information. To add some flavor to my speech, I might bend the rules a bit, and so run the risk that you will either misinterpret my words or fail to understand me entirely. I might venture an expressive metaphor that, taken literally, makes no sense at all (*Winston Churchill was a real bulldog!*), or use a word that ordinarily refers to another object altogether (*Isn't my Spot a pretty little baby?*), or propose an entirely new word of my own (*My boo-boo is so cute!*). But if I am free to break the rules in this way one at a time, I am not free to break them wholesale. Like a civil disobedient, whose principled way of life and general submission to the law is precisely what lends her crime its moral significance and makes credible the claim that it was an act of conscience, my underlying desire to be understood requires that if I choose to violate one or a very few of the rules, I do so only on condition that I simultaneously obey all the rest. Otherwise, just as we find it hard to interpret a thief's refusal to pay taxes as a protest at their injustice, you will not be able to put my violation, the original or unexpected verbal act I have committed, in a context that enables you to interpret it as I intend. The degree of ambiguity or uncertainty I am prepared to tolerate in the messages I send, and you in the messages you receive, determines how many of the rules each of us is able to break at one time and how closely we must conform our expressive and interpretative behavior to any one of them. From this perspective, much of poetry becomes a kind of civil disobedience for its own sake, a purposeful attempt to cultivate unpredictability and disorientation, to play loose with specific rules and artistic forms in a context of general compliance in order to express new ideas and explore new meanings, some intended by the poet, others originating in the audience itself. Indeed, as Rudi Keller (1994, pp. 95–107) has argued, if efficient communication were the only goal of speech, any innovation would make the transmission of meaning less certain, and language would tend toward stasis, as every speaker tried to conform his verbal behavior as closely as possible to the existing expectations of his listeners. Without these extracommunicative

purposes and the deliberate flouting of the rules they entail, that is, the "living languages" would scarcely change at all.

Where do the rules come from? How do we know them? When we learn a foreign language in school, they come from a book, where someone who knows them well enough to state them explicitly has conveniently written them down for us. Our job is to study the definitions and grammatical principles placed before us and practice their application until we have committed them to memory. When we have memorized a sufficient number of them and are able to use them adroitly enough to make ourselves understood in a variety of situations, we can say, with good cause, that we have learned the language. Note that we are not required to know the *reason* that any particular rule is what it is, or to gain enough intuition to see some system or pattern in the rules as a whole. All we need to do is know what the rules are and obey them. In German, for example, unlike English, every noun has one of three genders, and students are taught that no noun has been learned unless one knows which gender it takes. This has led countless students of the language to look for some general rule that might govern the assignment of gender, some pattern that might make sense of what otherwise seems to be a completely random attribute of nouns. But, as Mark Twain (1961, p. 445) lamented, the search is in vain, for in German,

> a tree is male, its buds are female, its leaves are neuter; horses are sexless, dogs are male, cats are female—tomcats included, of course; a person's mouth, neck, bosom, elbows, fingers, nails, feet, and body are of the male sex, and his head is male or neuter according to the word selected to signify it, and *not* according to the sex of the individual who wears it—for in Germany all the women wear either male heads or sexless ones; a person's nose, lips, shoulders, breast, hands, and toes are of the female sex; and his hair, ears, eyes, chin, legs, knees, heart, and conscience haven't any sex at all. The inventor of the language probably got what he knew about a conscience from hearsay.

Twain's frustration is easy to understand, as is the joke in the final sentence. For the apparently arbitrary quality of these rules, and hundreds more like them in every language, suggests that the rules are like *regulations*, instructions handed down without explanation by some official or board, such as the *Académie Française*, who, if not the inventor of the language, at least has the authority to say what its rules are and police their use by the rest of us. But not even the *Académie Française*, speaking at times in the voice of French law, can effectively impose its directives on the millions of French speakers around the world. And in any case, it is obvious that, unlike students in school, infants confronting their first language cannot simply learn the rules by rote and reproduce them. Children are not "taught" language in this sense at all. They "acquire" it, by inferring as best they can the patterns of correspondence between form and meaning they detect in the speech of others and imitating them as they try to speak themselves. For the child, the rules are almost never made explicit; instead, they are immanent in the behavior of others and must be *discovered* by the child. Over time, with exposure to a large number of different patterns and practice in applying them, the child develops the intuition characteristic of native speakers, the ability to sense which usages are "correct" and which are not without ever being able to say precisely why.[6] This is true of adults as well. After all, German, with all its genders, has been spoken for centuries, during which time thousands of new words have been added to

it. When the music of Muddy Waters and B. B. King was first heard east of the Rhine, how was it decided that they were singing *der Blues*, and not *die* or *das Blues*? Or consider this example from English:

Infinitive	Present Tense	Past Tense
to weep	he weeps	he wept
to keep	he keeps	he kept
to sweep	he sweeps	he swept
to sleep	he sleeps	he slept

Here, a rule for forming the past tense of a particular family of irregular verbs seems to be emerging: whenever a verb ends in *eep*, we form the past tense by changing the *eep* sound to *ept*. But there are exceptions to this rule:

to peep	he peeps	he peeped
to seep	it seeps	it seeped

Some verbs ending in *eep*, that is, seem to be regular; we form the past tense simply by adding the usual suffix *ed* to the infinitive. This is true, moreover, for the homophonic verbs *to heap* and *to reap* as well, though in everyday speech one can hear either *leaped* or *leapt* as the past tense of *to leap*, straddling the two alternatives. So it is not at all easy to say just what the rule in cases of this sort might be. Now suppose an entirely new verb comes into being. With the advent of automobile horns and electronic signaling devices, for example, we have come to label the sound they make with the onomatopoetic noun *beep* (and to call the latter device itself a *beeper*). The verb *to beep*, referring either to the action of the object itself (*I can't get this thing to beep!*) or to the use of it to produce the sound (*Beep your horn.*), follows naturally. But when we want to speak of beeping in the past, what are we to say? Surprisingly, perhaps, in practice this question poses no difficulty at all to native speakers. The first form (*He bept his horn.*) is never heard; the second (*He beeped his horn.*) sounds right as soon as we hear it.

Why? It may be that there is indeed a rule that governs this situation, and that a trained linguist could state it explicitly (compare Pinker 1994, pp. 138–47). But even if there is, it is clear that the vast majority of native speakers could not say what it is, despite their ability to apply it unerringly in practice. As the linguist Jean Aitchison (1991, p. 15) points out, "All normal native speakers of a language have a far more comprehensive set of rules than any linguist has yet been able to specify, even though the former are not consciously aware of possessing any special skill." They know these rules intuitively, not because they have been taught them by a teacher or a book, and they abide by them not because that is what speakers of proper English are supposed to do, but because they accord with patterns of speech they cannot articulate or justify but which have been engraved upon their minds by years of repetition. Or perhaps *to beep* becomes *beeped* because the English language itself is becoming simpler over time, as once irregular verbs are made regular and the proportion of regular verbs rises as a result, so that newly coined verbs are treated as regular unless there is a specific reason not to (Lyons 1981, p. 203). But if so, at whose behest is this simplification taking place? Why haven't *kept* and *slept* gradually been regularized as well? And why, contrarily, do we increasingly hear *creeped* where once we heard *crept*?

The answers to all these questions turn on the plain fact that there *is* no central authority with the jurisdiction to say what the rules are or the power to enforce them once they have been established. It is the individual users of the language themselves, with all the many purposes they bring to speaking and listening, who continuously legislate, repeal and amend its rules. As the English language is spoken by millions of ordinary people in an infinite variety of constantly changing circumstances, new rules are proposed by the simple act of speaking in a novel or unexpected way that the speaker finds useful or amusing. There is always a risk that the innovation will fail to serve whatever purpose it was meant to, reducing the speaker to incomprehensibility or worse, but to the extent that others respond to the proposal by grasping the innovator's meaning and using the new form in their own speech, old rules change and new ones are ratified by the community of speakers themselves.

But even as change in the language order yields to observation and analysis, and we discern the general nature of the process that produces it, its specific outcomes remain beyond our powers of precise explanation and prediction. Like its economic counterpart, linguistic entrepreneurship is suffused with uncertainty for participants and observers alike. Because innovation is just that, the genesis of something truly *new* through a complex interplay of subjective experience and original thought that takes place deep within an individual mind, it is, in the nature of things, unforeseeable. We cannot analyze all the relevant circumstances or account for the spark of creative inspiration that combine to produce a particular speaker's proposal of a particular change in the rules well enough to predict it; if we could, there would be no innovation. Nor can we hope to specify the conditions that will, at any time or place, lead to its acceptance or rejection by others; this knowledge is created by the experiment itself. The ease with which a rule can be learned and applied, the shifting analogical relationships between rules that develop over time to make one or another expression "sound right," the economy of expression and sense of belonging made possible by specialized jargon, and the personal pleasure derived from a particularly clever word or phrase, all of these are grounds for adopting some rules and not others. But there are more, as many and as different as the people to whom the decision is ultimately committed, so the success of any proposal, whether it will "take" or not, cannot be foreseen. The question is simply put: does the rule enable individual speakers and listeners to achieve their own purposes in using the language, whatever they may be? But the answer is not a matter of theory, available to us *a priori*. The only way to discover it is to perform the experiment.

By 1761, two years after the appearance of *The Theory of Moral Sentiments* but well before the celebrated economics of *The Wealth of Nations*, Adam Smith had discerned the hidden hand at work in all of this. In a subtle, erudite exercise in historical imagination typical of the Scottish Enlightenment's approach to the analysis of spontaneous order, Smith describes the evolution of language as a continuous process of entrepreneurial experimentation that in time bends both words and grammar to the needs and circumstances of their users. To illustrate this process in the absence of a clear historical record, he offers what his biographer Dugald Stewart (1980, pp. 292–93) called a "conjectural history," postulating a plausible but undemonstrable series of events that culminated long ago in the adoption of prepositional noun endings in ancient Greek and Latin. Impatient with the need to use distinct adjectives to indicate that a noun was the object of a verb of the possessor of a quality, he speculates, some anonymous language entrepreneur must have proposed achieving the same effect by

varying the ending of the noun instead:

> The example, indeed, of this contrivance would soon probably be followed, and whoever had occasion to express a similar relation between any other objects would be very apt to do it by making a similar variation on the name of the co-relative object. This, I say, would probably, or rather certainly happen; but it would happen without any intention or foresight in those who first set the example, and who never meant to establish any general rule. The general rule would establish itself insensibly, and by slow degrees, in consequence of that love of analogy and similarity of sound, which is the foundation of by far the grater part of the rules of grammar (Smith 1983, p. 211).

The textbook rules laid down by linguists and grammarians, that is, are not authoritative prescriptions of how proper English is henceforth to be spoken. They are codifications of practices that have already been determined "democratically," descriptions of how the people themselves have come to speak, subject to revision or repeal whenever new usages by those people so require. The rules are neither the products of an historically real social contract nor regulations imposed upon the language community from above. They are spontaneously generated conventions that originate within the community itself and, despite the absence of an explicit contractual agreement, serve the interests of those who observe them and draw strength from their voluntary adherence. Not even the strictest of prescriptive rules, taught in schools for generations, can withstand the force of this popular will. Well before Captain Kirk uttered his famous words, to split an infinite was no longer "to boldly go where no man has gone before." Nor is breaking up a long sentence by beginning a new one with a conjunction like *nor* or *and* quite the grammatical sin it once was. And the replacement of a complete subject and predicate that express a wish (*I hope we're not late.*) by an erstwhile adverb (*Hopefully, we're not late.*) seems not only to be a *fait accompli*, but to be spreading to similar adverbs as well. Thankfully, infelicities like this are rare.

An important consequence of this linguistic democracy is that there is not just one community of English speakers, but thousands, each distinguished by local rules that reflect the peculiar knowledge and shared experiences of its members. College students, for example, customarily describe those of their fellows who work the hardest at their studies in unflattering but often humorous terms. At the school I attended, a college of science and engineering, hard-working students were called *tools*, a word whose origins and precise connotations remained obscure despite its apparent allusion to technology. But at the school where I teach, tools are called *squids*, an obvious reference to a particular campus library, located in a modern building and enclosed by glass walls, where students can often be seen working late into the night. Before the construction of this library, some other word must have been used to describe the hard workers. Whatever it was, its demise began the moment an anonymous student, observing the resemblance of the library to an aquarium, called its inhabitants "fish . . . no, squids!" The joke must have brought a smile to those who first heard it, and as it was repeated around the campus, others too could enjoy the small pleasures of using so evocative a term in a context that could only be appreciated by a few, so the newly proposed rule was adopted. But because the fun of using the new word can be shared only by those with the special knowledge needed to get the joke, the rule cannot spread beyond this small community if, as is likely, there are similarly attractive

local alternatives available to others. In this way, over long periods of time, not only words but idioms, jargons, slangs and dialects, and with each of them a small but distinct language community within the great body of English speakers around the world, are born, thrive for a time, and pass away.

3. The Propensity to Speak and the Language Trap

The functionality of language, its remarkable ability to serve the diverse interests of millions of people as if it had been purposefully designed by a benevolent genius to do exactly that, is a source not just of wonder, but of important and difficult conceptual problems as well. Indeed, this illusion of design, the separation of the intentions of the individual actors in a social system from the order created by their interaction, is a distinctive characteristic of all spontaneous orders and the one most in need of clear explanation. But it is not easy to find a conceptual vocabulary that is up to the task. I have thus far relied heavily on the related metaphors of *contract* and *convention*, explicit or implicit agreements that require every participant to conform more or less closely to rules that make verbal behavior predictable and efficient communication possible. As the philosopher David Lewis (1969) has shown, these metaphors do have the virtue of capturing the functionality of language, even in the absence of a formal contract. People agree to contracts, or submit to conventions, precisely because they see their own interests as served by doing so; to say that a contract or convention in fact does this for them is just to say the same thing in different words.

But despite their analytic power, the metaphors carry heavy baggage. However they may be formulated, they imply some degree of conscious choice and free will in the decision to speak, elements that in turn require not so much the intention to create or participate in the larger pattern of social order itself as the ability to foresee its effects, at least in part, to glimpse the nature of the personal advantages to be enjoyed should one elect to join in the agreement.[7] When we choose to learn a new language as adults, these conditions do seem to describe our knowledge and state of mind, so that the contract metaphor comes close to literal truth. Given the rudimentary intellectual powers necessary to learn the rules, and the opportunity to do so, for most of our lives each of us is free to join whatever language community we like. All we need is a desire to communicate with those who are already part of it, or have been in the past. If we have an adequate guide to the rules and are content only to read and write it, we, like the decoders of the Rosetta Stone, can become proficient even in a language we have never heard and have no occasion to speak. But the metaphor of choice is hard to defend in the case of infants learning their first language, and in any case, it is clear that the first human languages could not have been created whole by conscious agreement, for the agreement itself could scarcely be expressed or understood without at least some part of the language already in place (cf. Lewis 1969, p. 4). Still, we must somehow account for the functional quality of language with which we began, to address our intuition that, even if primitive language was not in fact the result of an explicit agreement among rational people, it "could have been," in that it clearly *is* in the interest of every individual to suffer the loss of Crusoe's linguistic liberty to reap the rewards of life in a language community. How, then, are we to characterize the acquisition of language, and the role played in it by purpose and free will?

For Charles Darwin (1936, p. 462), free will had little to do with it. Language, he argued, "certainly is not a true instinct, for every language has to be learnt. It differs, however, widely from all ordinary arts, for man has an instinctive tendency to speak, as we see in the babble of our young children." Many contemporary linguists, influenced by Noam Chomsky's theory of universal grammar (1975, 1980), would agree. All human languages, Chomsky claims, are based on a common structure, a universal plan that makes the significance of such things as nouns and verbs, subjects and objects, phrases, clauses, auxiliaries and cases the same in every language, whatever superficial differences might exist in their own peculiar rules of syntax. This common blueprint for grammar, moreover, is innate, standard equipment in the brain of every human infant and genetically transmitted from one generation to the next. The linguist Steven Pinker goes a step further, and argues for the existence of a "language instinct."

> People know how to talk in more or less the sense that spiders know how to spin webs. Web-spinning was not invented by some unsung spider genius and does not depend on having had the right education or on having an aptitude for architecture or the construction trades. Rather, spiders spin spider webs because they have spider brains, which give them the urge to spin and the competence to succeed .... Complex language is universal because *children actually reinvent it*, generation after generation—not because they are taught, not because they are generally smart, not because it is useful to them, but because they just can't help it (Pinker 1994, pp. 18, 32, emphasis in original).

This is persuasive but overstated. Not even "true instincts," as Darwin called them, are self-executing; they demand both will and effort to be translated into behavior. Hunger and sex are surely instincts Darwin would recognize, but neither eating nor sex is something most of us "just can't help." We must exercise our will and move our bodies to do either one. Sometimes the will is lacking; people do choose to be celibate or refuse to eat to comply with a moral principle or further a cause. And learning is never effortless. Walking too is instinctive, and harder to learn than eating or sex; anyone who has watched a child struggle to stand and walk knows how much practice and hard work it takes. In the case of language, Rousseau (1966, p. 14), like Darwin, appreciated the combination of disposition, will and labor involved: "Simple sounds emerge naturally from the throat [but] the modifications of the tongue and palate, which produce articulation, require attention and practice. One does not make them at all without willing to make them." If the word *instinct* leaves too little room for this element of free will or the effort required to carry it out, let us adopt Smith's own terminology and call it instead a *propensity* to speak.

The element of will in the propensity to speak makes it possible to contend that the act of choice implicit in the contract metaphor extends even to infants learning their first language. Now one might say that very young children really have no choice in the matter, that they have to learn some way to make their needs known to others, and it is certainly true that no infant can survive for long without doing so. But the *child* has no way to know this. Endowed at birth with an already impressive capacity to acquire knowledge, to absorb information and experience and impose some mental order on it, the child is like a data processor waiting for data to process. Ready and eager to learn, the infant *knows* next to nothing. And while Chomsky may be right that human beings (and only they) are born with

the mental equipment necessary to learn language, there is, as far as we know, no biological imperative that they actually *use* it.[8] Speech for the infant is a purposive activity; the work of learning a language to speak demands a continuing act of will.

This will to speak, the argument might proceed, does not appear instantaneously at birth. The earliest months of life are spent simply coming to terms with the world, distinguishing the self from others, gaining control over one's body and learning to recognize the signals it sends to the brain. Only when all this has been mastered, when the child has separated the internal from the external world and realized that the latter can be manipulated to serve his or her purposes, can the child appreciate the advantages of language and begin to learn it. With a bit of imagination (or conjectural history), it is easy to see why the infant might take on the job. Suppose a child has made the crucial discovery that if she cries, a solicitous adult is likely to appear, ready to help. At first, the power to evoke this response may be enough to satisfy her; the grown-up, she learns, will usually try to determine just what the difficulty is and do whatever is necessary to address it. But the list of possible problems is long and, as any parent can testify, it may be some time before the adult is able to identify what it is. Is she hungry? Does her diaper need changing? Is she in pain, or lonely? Does she want a toy? As the adult runs down the list, trying one thing after another, the infant offers assistance in the only way she can—when the problem is discovered, the crying stops. If it is succeeded by coos of satisfaction, the grown-up is likely to respond with a smile or a hug, and the child soon learns the connection between these actions as well. A primitive system of communication, severely limited in its expressive range but effective nonetheless, has been established.

From here, it is but a short step to the far more efficient and discriminating tools of words and sentences. With the help of parents or older siblings, children first learn a few simple words that allow specific objects to be labeled or pointed out, and then combine these single words with physical gestures and patterns of intonation and emphasis that transform them into meaningful sentences or questions. Soon they are joining words together to form real sentences, and beginning to master the grammatical morphemes, fragments such as *ed*, *ing*, and *s* or *es*, that signify tense and number. By now, despite the inevitable mistakes they make and the gaps that remain in their verbal repertoire, they are truly speaking English. All that is left, apart from the lifelong task of assimilating more and more rules, is to grasp and make use of a second characteristic function of human language, a crucial role played within, not between, individual men and women. But as this second function assumes ever greater importance in their lives, the nature of the language contract itself changes dramatically, and as it does, the distinction between voluntary and instinctive behavior central to the contract metaphor itself breaks down.[9]

Young children use words and sentences only to say very simple things about objects and events in their immediate experience, in the form of straightforward declarative sentences and uncomplicated questions. For them, the here-and-now is all there is, and their primary objective in speaking and listening is to see to the satisfaction of basic needs and learn more about the world around them. What language the child is able to command is still just a tool for identifying objects whose reality to him does not depend on any particular label and expressing simple desires that can be felt before he has the words to communicate them. At this stage, the child has invested relatively little in the linguistic enterprise, and

were we to imagine him considering the admittedly unlikely decision to *leave* the contract, to stop speaking and listening altogether, the costs to him of doing so at this early stage would be correspondingly small. Like a husband or wife in the first few days of marriage, the child's voluntary entry into the language contract, his indulgence of his propensity to speak, has not yet had time to leave its mark on his personality. He is still the same person, with the same needs and desires, that he was on the day before the choice to speak was made. Like the newlyweds, were he at this point to withdraw from the contract, it would still be possible, to a large extent, to return to the *status quo ante*. For this brief moment, we might say, the language contract is like any other. We enter into it of our own free will, and remain bound by it only as long as we choose to be. But as we mature, we increasingly use language not just as a way to communicate with others, but as the door to a world of memory, prediction and imagination that exists solely within ourselves. It gradually becomes a vehicle of thought (though not the only one), a means to comprehend our emotions and call to mind things that are distant from us in time or space, that do not yet exist or can only be imagined. It makes possible the transmission of knowledge and culture from one generation to the next, allowing the slow accretion of experience and reflection that constitutes wisdom. If we begin to use language helpless before the needs of our own bodies, we end by using it to create new possibilities and, in time, to recreate ourselves.

But recognizing language as a medium of thought as well as the means of conversation puts great strain on the contract metaphor. For even if it is true that entering the contract of our native language, learning the rules for the purpose of communicating with others, is a propensity that leaves room for choice, once we taste the fruits of the interior function of language, once we use it to *think* as well as speak, we are no longer free, as we are at some point in the course of every ordinary contract, to withdraw from the agreement. Just as long years of marriage transform the independent man and woman who enter the partnership into a couple shaped and bound by their life together, thinking in language over time profoundly influences the people we become. We begin using language to satisfy desires whose existence precedes the words we use to express them. But as our store of words increases, our conceptual vocabulary increases alongside it. We conceive new desires, new interests, new purposes that would not have occurred to us without the new words that represent them. A child can be hungry before she has the word for food, but she cannot appreciate beauty or aspire to immortality until she has learned something of what these abstractions mean. It is precisely because we continuously recreate ourselves in this way through the use of language that we cannot freely withdraw from the contract once we have committed ourselves to it. Even a marriage of fifty years can be ended, though the toll on the partners is likely to be great. But it is hard even to imagine a sentient adult voluntarily renouncing the use of language and returning to the condition of an infant. Once we enter the language contract, we come to depend upon it for our continued existence as the individuals it has helped us become. Then we cannot leave it.

And so, whether language is at first a propensity or an instinct, a matter of choice or of necessity, makes little difference in the end. By the time words have made us their prisoners, we can scarcely conceive of a world without them, and however we may have begun, we soon come to behave as if speech *were* instinctual. But the absence of conscious choice, or even of free will, is not the absence of purpose itself. We think of ourselves as acting

purposefully when we see clearly what our objectives are and set out deliberately to achieve them. But if the great majority of our purposive acts do fit this description, there are some purposes so fundamental to us that nature has not entrusted them to our intellects. Instead, we are enticed into pursuing them all but unconsciously by "propensities" that soon turn to "instincts" in the ceaseless give-and-take of spontaneous order. Language stands at this threshold of instinct precisely because we need it so urgently, first to live and then to live life as we know it. And this, in turn, is all the purpose necessary to sustain the language order and make us its products. In language, as in the spontaneous division of labor illuminated by Smith (1976, I, pp. 13–36), our most deeply rooted individual behaviors and our most elaborate, subtly nuanced social institutions develop together, inseparably, continuously shaping and reinforcing one another in endless conversation.

All of this suggests an important distinction between truly spontaneous patterns of order, those that emerge from the kind of primeval behavior involved in language, and explicit social contracts, orders created intentionally by agreement between free men and women who each hope to gain something by doing so. The contractarian state envisioned by John Locke and Thomas Jefferson and the many forms of business organization that emerge from free exchange are all true social contracts in this sense. People enter them sentiently and in their own interest, accepting the obligations they impose with an eye toward achieving some visible goal for themselves, or some foreseeable state of the social world they prefer to the *status quo*. In such circumstances, they are generally able to see whether or not the contract is giving them what they want, and to leave it or reformulate its terms when it is not. But in spontaneous orders driven by deeply engrained, often unconscious behaviors, it is harder for us to see or appreciate the larger order itself, or even to recognize the service it provides to us as individuals. And as the fate of artificial languages makes clear, it is much harder still to "rescind" the order and reconstruct it to our satisfaction.

4. Language Planning

Perhaps it is the trap set for us by the language order, the uneasy sense that it, and not our own conscious choices, shapes our development as individual human beings and divides us into ancient language communities separated by walls of enmity, that has drawn so many to artificial languages such as Volapük and Esperanto. At least since the efforts of Gottfried von Leibniz and the British clergyman John Wilkins to create universal languages in the seventeenth century, visionaries have dreamed of replacing the suspicion and hostility produced by the Babel of natural languages with the planned, rational order of a single constructed one, uniting all of humankind in a peaceful community bound by a common tongue. Even Adam Smith, commenting in 1763 on a Yorkshire schoolmaster's attempt at language planning, was

> glad to contribute anything in my power towards completing his design. I approve greatly of his plan for a Rational Grammar, and am convinced that a work of this kind, executed with his abilities and industry, may prove not only the best system of grammar, but the best system of logic in any language, as well as the best history of

> the natural progress of the human mind in forming the most important abstractions upon which all reasoning depends.[10]

But the local context and specialized knowledge that lies beneath the endless variation in natural languages, coupled with the profusion of purposes and desires we bring to them, has frustrated them all. The causes of their failure illustrate the formidable obstacles that conspire against any attempt to impose conscious purpose and rational design on the unplanned, unpredictable outcomes of spontaneous order.

The natural languages, as we have seen, are models of decentralization. No central authority proposes or adopts the rules, or has the power to enforce them. Instead, in a kaleidoscopic world of continuously changing personal preferences and circumstances, the task of rulemaking is given to a committee of the whole, an unsupervised legislature of transient individual speakers and listeners, no two of whom know or want exactly the same things. In pursuit of their own purposes, and without being told by anyone to do so, they bring all the idiosyncratic knowledge they possess to bear on the choices they make. In this way, natural language orders reach deep inside the minds of individuals, turn the key of self-interest to unlock the vast quantities of relevant but fleeting, often inchoate information buried there and, without ever collecting it or transmitting it to any central office, put it directly to use in making the rules.

But simply to describe so monumental a feat of discovery is to suggest how hard it has been for the artificial languages to replicate it. The dream of the earliest planners was an *a priori* language, one built entirely from scratch, whose practicality would lie in the simplicity and unswerving regularity of its rules. Maintaining this regularity in practice, however, requires that the language be designed and administered by a small body of authoritative experts, and despite the broad appeal of just this in the Age of Reason, the limitations of such a contrivance soon become clear. The conceptual scope and expressiveness of any constructed language are strictly bounded by the knowledge and experience of its constructors; they can, obviously, formulate rules only for situations they are able to anticipate. Should new or unforeseen circumstances arise, or some users of the language be motivated by expressive purposes other than simple communication, the central body will either have to impose its own will on recalcitrant users to preserve the regularity of the language or surrender its authority over the rules to them, in which case the simplicity and uniformity of the language would surely be compromised and the exercise of language construction itself rendered pointless (compare Eco 1995, pp. 330–36).

More recent efforts at language construction have largely abandoned the search for an *a priori* system and, like Esperanto, attempted to build a new language *a posteriori*, from the bricks of older ones. The original ambition of eliminating the parochialism and messy irregularities of the natural languages in favor of a single, rationally designed language that would eventually be spoken everywhere has been left behind with it, replaced by the more modest goal of creating a universal second language that might still advance the cause of human solidarity. But this concession of continuing primacy to existing languages made the problem of inducing large numbers of people to learn the constructed language even more difficult and reinforced the commitment of their designers to simplicity and regularity. Esperanto, for example, is still governed by the sixteen rules of grammar and the vocabulary of some nine hundred roots first published in 1887 by its inventor, Ludwig Zamenhof, to

preserve strict grammatical regularity and constrain the ways new words may be constructed from the basic roots. Thus, to build the word for *hospital* in Esperanto, we begin with the root *sana*, which means health, add to it the prefix *mal*, signifying bad (*malsana* means *sick*), affix the suffix *ul* to denote a person characterized by the idea contained in the root, add the second suffix *ej* to indicate a place of special relevance to the object indicated by the root, and end with a third suffix, *o*, to make the word a noun. The result is *malsanulejo*.

But because Zamenhof's fifteenth rule allows roots to be imported from the living languages when "the greater number of languages have derived [them] from the same source," this complex construction has itself been superseded in Esperanto by the easily recognizable word *hospitalo* (Large 1985, pp. 119–20, 205). To solve the problem created by the limited knowledge of the central authority, that is, and to introduce the flexibility of expression necessary to respond to changing conditions, Esperanto must rely on the concurrent existence and vitality of the far more complex, unadministered languages it is intended to supplement. And the more it does so, the more the power to specify the rules passes from the center to the periphery, the more like these living languages it becomes, and the less able to satisfy the original criteria of simplicity and regularity. It is hard to imagine real speakers of Esperanto constructing the words for telephone or computer strictly by the rules when the roots of *telefono* or *komputero*, both already produced spontaneously by the speakers of natural languages, are there to be borrowed, and harder still to see how the subtle purposes served by the idioms and dialects that are the natural fruits of these languages could ever be satisfied if they did.[11]

The driving vision of Zamenhof and all his colleagues, priorists and posteriorists alike, has been to create a single, great human community through the device of constructed language. But their failure testifies to more than the superior ability of natural language orders to tap the imaginations of individual human beings and exploit their shifting motives and idiosyncratic, personal knowledge of local conditions and opportunities. It also speaks to the essential *political* element of all social planning, the attempt to superimpose the specific objectives of the planners on the myriad and complex purposes of their subjects (Hayek 1944, pp. 56–71). Beautiful as it is, the dream of peace and harmony through universal language has been broken on the rocks of two fundamental, contradictory human impulses, each a source of strength and weakness, and each impelling us to resist submission, even for the noblest of ends, to a larger whole. One, the longing for personal identity and autonomy, pushes us toward an individuality of expression and a readiness to experiment with the rules that allows us to distance ourselves from others and constitute our own, distinctive personalities. The other, a countervailing yearning for human solidarity, perhaps itself a product of common patterns of thought and perception spontaneously generated within language communities, encourages us to think of ourselves not as atomistic individuals but as members of small, historic communities, owing loyalty not to a grand vision of an indivisible, homogenized nation or race but to a narrow clan of "people like us," an extended family united by memories and aspirations that span generations.

These tangled, powerful impulses combine to maintain the ancient barriers that separate different language communities and erect new ones continuously within each of them. For the same decentralization of rulemaking that enables the diverse purposes of individuals to be pursued through a multitude of distinctive speech patterns also allows the isolation and

exclusion of outsiders through the impenetrability of local rules. Across the cultural and national boundaries that continue to divide language communities, the resultant of these opposing forces has been hatred and bloodshed that horrifies us no less than it did Zamenhof and his fellow dreamers. In the case of my own language, it has been an international body of English speakers that is not one universal community but thousands of small ones, each with its own version of the mother tongue, a pattern of continuous fragmentation repeated in the history of every great language. The innocent pleasure evoked by privileged talk of tools and squids has its mirror in endless tribal wars between provinces masquerading as nations, bitter struggles for "language rights" like those in Canada and Spain, and the apparently irrepressible ethnic and cultural tensions that afflict modern nation-states everywhere. We are, it seems, unwilling to dispense with either of the passions that produce them.

Notes

1. On the calculation debate, see Murrell (1983), Lavoie (1985), Adelstein (1992).
2. See, for example, Menger (1963, p. 146), Hayek (1970, p. 4), Friedman and Friedman (1979, pp. 25–27). On invisible hands generally, see Ullmann-Margalit (1978) and Keller (1994, pp. 61–107).
3. The linguist Rudi Keller's (1994) study of language change is subtitled "The Invisible Hand in Language," but is in fact devoted far more to elaborating the idea of spontaneous order itself than to discussing language as an example of it. A recently published handbook in "institutional and evolutionary economics" (Hodgson, Samuels, and Tool 1994), moreover, includes substantial entries on, among other relevant topics, the evolution of cooperation, the theory of the firm, institutions, the evolution of money, planning, property, and rules, but none on language, morals, or the common law.
4. Wittgenstein (1967, paragraphs 172–315). On this and similar arguments, see Castañeda (1967) and Fogelin (1976, pp. 153–71).
5. On language as a tool, compare Wittgenstein (1967, paragraphs 11–12, 489, 569) and Pitkin (1972, pp. 36–37).
6. Compare Oakeshott (1991, pp. 468–69) on the acquisition of language and Wittgenstein on the learning of "language games" (1967, paragraph 208 and *passim*; Pitkin 1972, pp. 43–49, 55–60).
7. Compare Lewis (1969, pp. 36–51).
8. Chomsky's view that the capacity for language is unique to humans and not the product of natural selection is challenged in Lieberman (1984).
9. On language acquisition in children, see Lenneberg (1964), de Villiers and de Villiers (1979, pp. 31–81), Locke (1993), Bloom (1994), Pinker (1994, pp. 262–96).
10. Adam Smith to George Baird, February 7, 1763, quoted in Stewart (1980, pp. 337–38). On artificial languages, see Forster (1982), Large (1985) and Eco (1995).
11. On Zamenhof's rules and roots, see Large (1985, pp. 71–80). Zamenhof expanded the number of roots to eighteen hundred in 1905.

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