

6. The Logic of Conversation

A word means what I want it to mean, neither more nor less.

Lewis Carroll, *Through the Looking Glass* (Humpty Dumpty's speech)

A sign is everything which can be taken as significantly substituting for something else.

This something else does not necessarily have to exist or to actually be somewhere at the moment in which a sign stands for it. Thus semiotics is in principle the discipline studying everything which can be used in order to lie. If something cannot be used to tell a lie, conversely it cannot be used to tell the truth: it cannot in fact be used 'to tell' at all.

Umberto Eco, *A Theory of Semiotics* p.7

It will now be clear why classical logic is largely irrelevant to the problem of argument among people who see the world in significantly different ways. As the form of valid inference – displaying the formal patterns in our use of words – logic has long been conceived as a kind of skeleton for language, showing why two statements may be equivalent, or why one statement may imply another¹. In contexts where the meanings of words are fairly constant and reliable, logic can still play this role. On the other hand, in most real-life arguments where words mean what their users want them to mean, and where such preferences are inseparable from the substantive issues in dispute, the attempt to agree on definitions merely underlines the contentious instability of language itself. The notion of logical proof is empty whenever terms are too vague, too abstract or too value-laden to bear precise, mutually acceptable definitions. The predicament can be cast in a rough syllogism:

Possibilities of reason depend on the existence of logical norms
that distinguish legitimate from illegitimate claims.

In open discourse, where passions run high, and word meanings are mutable and self-serving, such norms are not supplied by classical logic.

Therefore:

We must either resign ourselves to the absence of reason in all discourses that engage our passions, or else re-think the foundations of logic on broader lines that allow for the

¹ Classical logic is concerned with the inferential meanings of words and the tautologous equivalence of word strings – with the many ways there can be of saying essentially the same thing. If it is true that “All men are mortal”, then the mortality of any individual is part of the meaning of his humanity. When we are told that someone is human, we have also been told implicitly that death is part of his lot. Classical logic lets us *infer* his necessary death from the fact of his being human.

mutability and contentiousness of language.

So let us roll up our sleeves and begin.

6.1 Rethinking Logic

Do I contradict myself? Very well then, I contradict myself. I am large. I contain multitudes.

Walt Whitman

The task is to understand how intelligibility and reason are possible (to the very considerable extent we know them to be so) in domains where viewpoint and interpretation have ultimate sovereignty – i.e. in irreducibly polyphonic domains where no universal “truth” can marginalize dissent. What is needed is a kind of *hermeneutic* logic (as we might call it) – a logic of interpretation and understanding – to clarify the “rules of engagement” among divergent knowledge cultures, divergent systems of understanding. Such a logic will take divergent values and interpretations in its stride; and it will deal justly with “hard” and “soft” disciplines alike: with the physicist’s interpretation of experimental data, with the historian’s interpretation of his documents, with the critic’s interpretation of a poem.

This hermeneutic logic must accept a task that classical logic sets to one side, and that most post-modern thinkers concerned with the problem also preferred to ignore – either in a spirit of mischief, or from political agendas that deranged their judgment. The task is to do philosophical justice to our intuition of a single material reality that we all inhabit, but also to our “subjective” understandings: to Plato and to the Sophists; to the world of science with its powerful claims to universality; and to the diverse worlds of human cultures and interests. The rules of logic should be canonical in some sense – not mere cultural conventions, but necessary features of any conversation that can make collective, public sense from the articulated viewpoints, values and perceptions of its participants. Relativists hold that no such trans-cultural logic can exist – that all “universal principles of conversation” are just conventions of a culture. To the contrary, I suspect that the requirements for intelligible discourse are the same for everyone, right across the universe, for all cultures, all species, all ecologies – inherent in the nature of conversational relationship.

Conversation may or may not succeed in construing an “objective” *view from nowhere*,² that would make all personal and cultural understandings reciprocally intelligible, relative to some universal truth. No such abstraction may be available. Even if it is, it may not attract a consensus. All that reasoned

² Thomas Nagel’s term for the construed, “objective” perceptions available from an artificial “public” viewpoint that belongs to everyone (to everyone who want to share in it), but not to anyone in particular.

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conversation can be sure of constructing will be a tensegrity of coherent argument – a “meeting of minds” – along the lines of Section 3.2. Accordingly, the logic we are after will amount to a theory of polyphonic understanding. It is a fair conjecture that such a theory will apply to all minds everywhere, because the conditions of intelligibility must be prior to language and culture, and to the evolution or design of sensory organs and nervous systems. There must be common requirements of perception, recognition and classification that shape both biological and cultural evolution, diverse as the outcomes of these processes are known to be.

A hermeneutic logic that can work with polyphonic truth should reduce to classical logic in the special case that meanings are stable, and common assumptions agreed. But it will generalize and extend this logic in several ways. To begin with, it is concerned – as classical logic is not – with the complex inter-relationship of theory, value and practice. Instead of focussing solely on descriptive, value-free, true-or-false statements, hermeneutic logic finds the source of the world’s intelligibility in the three-fold interdependence of praxis, values and “beliefs” (i.e. cognitive commitments), as discussed in the last chapter. While classical logic, to uphold its conception of factual truth, must insist on a rigorous separation of these elements, a hermeneutic logic bases itself on their interdependence. It is a logic of values, beliefs and intentions all bound up together.

Hermeneutic logic need not and does not deny the existence of a real world, and is consistent with the most steadfast realism. On the other hand, it in no way precludes commitment to some particular narrative about that world, but rather encourages a diversity of such commitments. However, for purposes of extra-mural conversation with interlocutors who do not share the same preferences of understanding, it suspends all personal commitments, and takes a polyphonic, “ecumenical” approach, remaining neutral between divergent stories in play. Its concern is with mutual intelligibility and integrity, rather than absolute truth. Human truth, where it exists at all, is always construed and consensual. More commonly, it is a structure of argument. God’s-eye Truth, by definition, lies outside of human conversation.

What we would call “hermeneutic logic” seeks to collect and articulate the necessary working assumptions for mutual intelligibility and *knowledge-value* in a cross-cultural conversation. Of these working assumptions, the following seem fundamental:

Assumption: Each protagonist is ineluctably part of a common situation, but lacks a god’s-eye view of it. In general, the best available answer to a question is not a “true” statement, but

Comment: a structure of reasoned argument among competing views. Even if I believe I have been vouchsafed a unique revelation, it is necessary to lay this commitment to one side in dealing with epistemologically challenged persons, less privileged than myself.

Assumption: The “beliefs” (cognitive commitments) a person comes to hold, along with the experiences that derive from and justify these, will have their roots in his or her life experiences, interests and values.

Comment: This relativizing assumption is necessary if I am to give a cognitive adversary the benefit of the doubt, and treat with him as perceiving and dealing in good faith. Without it, I am compelled to think anyone who disagrees with my own position either knave or fool. With it, I can attempt to understand how my interlocutor’s commitments are grounded in his life experiences from much the same motives (and with comparable justification) as my commitments are grounded in my own experiences.

Hermeneutic logic is consistent with the “perennial philosophy” of contemplatives and mystics: *Value* (that is to say, *love* in all its manifold forms) is not only the source (or “motivator”) of our actions, but of cognition as well. To know anything at all we must become involved with that thing, contemplate (i.e. “spend time” with) it, and generally give ourselves up to it in order to receive its teachings. Doing so, what we come to know will depend on the nature of the relationship we have created.

Assumption: Values (to view cognition from the other end) derive from the kind of creature one is, and the kind of life one leads.

Comment: Our patterns of valuing are certainly personal, but they are not mere whims. Very like our so-called “beliefs of fact,” our values and priorities represent commitments. They are formulated, accepted, and finally habituated, so as to render experience intelligible. They represent heuristic principles, or “rules of thumb,” to help us in making sense of the world by orienting us within it – by pointing out to us which way is “up.” This assumption is needed to accommodate values, especially the values of others, within the scope of reason. Without it, reason becomes, as Hume said, “the slave of the passions” – a means for gratifying

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tastes that are themselves beyond understanding, justification and ethical or aesthetic judgment. Thus, it becomes impossible to reason about values – to transmute competing interests into joint concerns.

Originally, and in its etymological meaning, logic is the philosophy of the *Logos* – the creative, magically powerful Word. As such, it overlaps with the descriptive sciences of semiotics and linguistics to embrace the whole domain of articulate meaning and understanding. This domain, we've seen, can no longer be conceived as absolute or value-free. We can no longer imagine that there is a single correct, or most nearly correct, understanding of everything, toward which all right thinking persons must converge – following sound arguments wherever they lead. (Well, we can imagine what we please, and may even find agreement in some areas, but we will find it practically impossible to convince anyone of anything, unless he is already disposed to be convinced.) We must accept that people, and whatever other sentient beings we encounter, can legitimately understand their worlds in very different ways – according to their “lights” as we say. That is, they will understand according to their life histories and experiences, their physiologies, their cultural and personal habits, their interests, their purposes, and the moods they happen to be in. In the last analysis, there can be no common truth or meaning that does not finally depend on a structure of potentially divergent understandings.

In sketching the outlines of a “hermeneutic” logic that could avail under these conditions, we must begin by lowering our expectations. Hermeneutic logic (unlike the classical variety) cannot give mechanical procedures for generating valid conclusions from agreed pre-suppositions. As we've suggested, when meanings are unstable, the jump to mutual intelligibility (never mind agreement) is a sympathy of resonances, not the outcome of a rule-bound process. What hermeneutic logic might provide is a theory of understanding – a kind of meta-psychology about the grounds and mutual relevance of diverging cognitive commitments. Its aims might be:

- 1) to explain how understandings are formed in conversation – partly from direct suggestions of “the things themselves”, and partly in the flux of suggestions from the conversation's participants;
- 2) to elucidate the grounds and methods of reasoned *argument*: the process of systematic comparison and criticism of divergent understandings.

In short, a hermeneutic logic must tackle the central difficulties of any serious relativism: to explain how diverse understandings are constrained, and brought

into mutual relationship by their exposure to feedback and correction from a common world; to explain how disparate understandings may be shared – at least to the extent of mutual intelligibility; to explain how collaborative, more-or-less common understandings can be developed when interlocutors are neither alike in their interests and backgrounds, nor so unequal in power that one party can just impose its preferred understandings on all the others. This last point is the cardinal weakness of relativist thinking at present: namely, that it can scarcely conceive of any social relationship or cultural transmission except in terms of power.

Now, it would be correct to say that power issues are always present in human relationships, and that the balance of power among interlocutors is usually somewhat – or extremely – unequal. And Nietzsche's point – that understanding, by its very nature, involves some assertion of cognitive power – is also correct. But it does not follow that power is the only, or even the essential feature of all cognitive and social transactions, or that every case of cultural influence is simply an imposition of the stronger party's cognitive structures upon the weaker. Thinking in these terms only distorts our social priorities, and distracts us from really brutal and flagrant abuses of power, which would keep activists busy enough.

In real life, the distribution of power is rarely so unequal as to allow a dominant faction to impose its concepts and values in any straightforward way. The spiritual conversion of a conquered people is more difficult than outright extermination, and even that has rarely been feasible. History offers no end of examples of the conquest and absorption of one culture by another, but scarcely any that have been total, entirely one-sided, and free of active collaboration and selection by the weaker party. And the most intangible items of cultural inventory – its concepts and its values – are always the last to go. For all the atrocities inflicted by Euro-American peoples on aboriginal populations and on descendants of imported African slaves, and for all the disproportions of power involved, the *cultural* war against these peoples, from a white supremacist perspective, has been a failure. Their spiritual subjugation and disappearance from the cultural landscape was never achieved, and now seems more unlikely than ever. The same point is even more obvious concerning the alleged cultural domination of men over women. Notwithstanding some very real social injustices, a case could be made that males always and everywhere find themselves much more thoroughly co-opted by the reproductive, "uterine" imperatives and time-tables of their women-folk than women ever are by the "phallogocentric" agendas of their men. I doubt there is a culture in the world so thoroughly "patriarchal" that experienced husbands are not afraid of their wives' ability to make their lives miserable when they themselves are unhappy about something. Almost always, it will be simple-

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mind to understand a relationship in terms of power alone, and even more so to analyse cognitive influence in terms of power relationships, to the exclusion of all other factors.

We do not wish to overlook the significance of power-relationships in the cognitive sphere as elsewhere. But if we hope to understand the sharing of cognitive structures in conversation, we have to think beyond the Nietzschean language of imposed interpretations. We have to think in terms of destabilisation and the evolution of differing understandings, along the lines of Section 5.2. In short, we need something like a hermeneutic logic, not just a sociology of ideas or a political science.

In laying foundations for such a logic, all three central problems of classical logic will need to be re-considered: the problem of *concepts and instances*, the problem of *statements*, and the problem of *inference*. Each of these now stands in need of drastic rethinking in light of the scandal of interpretations, and then of the best current thinking in linguistics and cognitive science.

The first problem, that of *concepts and instances*, is concerned with the formation of general ideas and their relation to concrete experience. Where does the idea of a “hat” come from, and what precisely gives the word its meaning? How do we decide whether this thing on my head is or is not a hat? To what extent, and how irrevocably are the particulars of experience shaped by the concepts that a given language makes available for their representation? What epistemological and ethical considerations warrant the lumping together of particulars as instances of a generic category?

The second problem is concerned with the nature and force of *statements*; and the question is: What are we doing when we make them? Given a repertoire of viable concepts and a vocabulary to express them, the grammar of a language allows its speakers to construct meaningful statements by stringing words in sequence. This we continue to do as well as ever. But the scandal of interpretations challenges the logical force of statements, and opens doubts about their cognitive significance. Formerly, a statement was thought to express a logical proposition which might be true or false, and had to be one or the other. In polyphonic domains, as we’ve seen, statements do less and more than this. Not all well-formed statements express verifiable propositions. Determining truth-value for such statements is not only an impossible, but a meaningless task. And yet, extreme positivists to the contrary, statements like “God loves you,” or “It is morally permissible for physicians to assist the suicide of terminally ill patients who desire to end their sufferings,” are not simply meaningless. Nor are they precisely speech-acts, except in the trivial sense that

all speech is, among other things, a kind of act. Unlike true speech-acts (e.g. “I now pronounce you Man and Wife”), these unverifiably interpretive statements seem to describe a state of affairs, not to create one. The idea of “description” (in the sense of a “verbal mirroring of the world”) is fraught with difficulties but in descriptive speaking or writing, there is usually some intention to assert something about a real or imaginary world, depending on whether we are engaged in the genre of “fact” or that of “fiction.” What does it mean to make an *assertion* (as distinct from a mere *suggestion*), absent the idea of classical truth? That is the second problem.

The third problem, that of *inference*, pre-supposes answers to the other two: How do concepts and statements “hang together”? What (if anything) does it mean to say that one statement implies another? On what principles of relatedness and consistency do our schemes of articulate understanding cohere internally, and evolve under the twin stresses of reality and conversation? On what basis (if any) may we argue that two statements, or cognitive commitments, are “inconsistent”, or mutually exclusive? When, or to what extent, should we feel embarrassed when such inconsistencies are called to our attention?

Before approaching these questions, I must emphasize that this attempt is no more than a survey, and beg indulgence for the sketchy treatment that follows.

6.2 Concepts

A recent development in linguistics³ has caused great difficulties for philosophers, and is still not widely understood or accepted. Traditionally, it was thought that concepts were generated by and coextensive with their definitions. This, after all, is how they behave in mathematics, where a circle (for example) is defined as a locus of points at a given distance from a given point. On this analogy, philosophers were led to look for similar definitions of Justice, Goodness, Beauty, and Man himself in terms of their essential properties. The idea has been that a properly defined concept generates a logical collection (a *set* as mathematicians call it) comprised of entities for which that definition is true. Once this is done, the defined concept and the list of members satisfying its definition can be treated as equivalent representations of the same set. For example, “the set of prime numbers less than ten” and “{2, 3, 5, 7}” are equivalent specifications. Similarly, if “featherless biped” were accepted as an adequate definition of Man, then the set of human beings could be identified with the collection of two-legged animals without feathers.

³ See George Lakoff’s book, *Women, Fire and Dangerous Things*.

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However, it can be shown, both introspectively and by experiment, that the concepts of ordinary language do not work this way. All mathematical circles partake equally in the defining properties of a circle; all prime numbers partake equally in the defining properties of a prime. But all birds are *not* equally bird-like. Pigeons or sea-gulls are more *typical* birds, we feel, than penguins or ostriches. An armless wooden dining-room chair is more typically a chair than an upholstered executive desk chair, or an arm chair. And a chair wide enough for several people is called by a different name entirely. Nonetheless, if you push the point, a sofa is still recognizably a kind of chair, though it will seem odd to call it so in most contexts. The point is: Concepts of ordinary discourse do not behave at all like the defined structures of mathematics. They lack sharp boundaries, for one thing; and they have more and less typical members. It is not that membership is uncertain – as, in dim light, it may be impossible to make a judgment of colour. It is not that membership is a matter of probability – as in “fuzzy logic.” It is that membership is somehow a matter of fit with some prototypical member, remembered or imagined: a pigeon is more bird-like than a penguin, i.e. closer to what we think of as a typical bird. The classical theory of concepts does not explain why categories have such prototypes, and more and less typical members.

Again, classical theory does not explain why some concepts are more basic, more readily thinkable than others. For example, we do not ordinarily speak of “my four-legged, tail-wagging, barking animal.” Nor do we usually say, “My American Staffordshire terrier.” Unless there is some reason to be more general or more specific, we say simply, “my dog.” The concept “dog” is somehow handier, more natural to the mind, than either “animal” or “terrier.” “Dog” is said to be a *basic level* concept, where “terrier” is awkwardly specific in most contexts, and “animal” awkwardly abstract.

Many examples of these kinds, and several ingenious experiments, have forced linguists and even philosophers (albeit with the greatest reluctance) to recognize that the semantic coverage of ordinary words is not specified by a definition but by a mental image – a prototype – along with intuitive criteria of similarity. Such cognitive prototypes vary from person to person; and even for the same person, they can evolve over time. Correspondingly, recognition of something as a bird (let us say) – is not done by verifying compliance with a definition of birdness, but by checking its similarity to one’s personal, mental image of a typical bird. Either way, the grounding of concepts in prototypes, not in definitions, reveals yet another aspect of cognition’s dependence on interpretation.

Generals and Particulars

As we can see, then, the formulation and use of concepts carries a *logical* requirement for at least three types of judgment:

- 1) First, an implicit judgment is required for the grouping of sensations into recurring “packages,” identified as apparitions of some particular thing. In the infant, this already represents a very great achievement: The cluster of sensations that he will come to call “mother” are constantly disappearing from view, and will look different every time they appear. Yet whatever mother’s mood, and however she is dressed, a normally developing infant soon comes to recognize “her” as a stable being: her various sensory presentations are somehow bundled together and perceived as a self-identical entity around which experience can accumulate. What is true of mother is true of all perceived entities – all such stable clusterings of sensation and activity. Before general concepts can exist, there must be stable particular “things”: a fairly reliable recognition of occurrences that persist over time and/or space, remaining sufficiently self-similar to be grouped together as coherent objects, qualities or types of activity, though they are not yet instances of any general concept or “kind.”
- 2) Before the particular can be recognized as an instance of a general concept, it must be compared with previous instances, and recognized as affording “closest fit” to some available “reference image.” These matching comparisons require a second type of judgment. Dogs of all shapes, sizes and colours have to be grouped together and distinguished from things that are not dogs. These groupings might be done in many different ways, and young human beings invariably learn to do them under the influence of people who are already doing them in some particular way. Feral children, who have been deprived of adult human influence during the critical developmental window, seem to have great difficulty learning to categorize in this way. Logically, what is required is that some generic “dog image” be formed by the child, and subsequently evoked and “re-cognized” by any presenting experience that sufficiently resembles it. This generic dog-image may base itself either on one particular dog, or on a composite of significant dog-experiences. Thenceforth, to be recognized as a dog, a new entity must be judged to resemble the child’s stereotyped dog-image more completely and surely than it resembles anything else.
- 3) In the course of (personal) reflection and use and (inter-personal) conversation, our reference images themselves must be adjusted for convenience, commonality, and stability; and this process requires yet

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a third level of judgment. The prototypes or “reference-ideas” that form the basis for our category judgments are not static. They are continually being adjusted, and it takes a long time to get them right – that is to say, consistent with the common usage of a language community and with one’s own conceptual needs. Moreover, the reference-idea of a dog involves much more than just the mental picture of a standard dog. It also involves a scheme for judging whether some presented thing or creature is dog-like enough to qualify as a dog, or different enough that it must be considered something else. This scheme forms the basis for Aristotle’s troublesome, but useful notion of an *essential* property: one that a thing must have in order to be the kind of thing it is, and not some other kind.

Notoriously, young children (who may already be highly articulate) still use words in peculiar ways, with semantics that are not quite right. Words are used too broadly or too narrowly, with a sense that differs from the adult norm. It takes years for usage to stabilize along conventionally correct lines, and in some cases it never does. The philosopher spends his life tinkering with troublesome concepts whose common usage does not match his personal reference-ideas.

Much research is being done, and books are being written on how each type of judgment is made. What is important for our purposes is that none of these judgments can be rigorously justified in classical logic. They represent interpretive strategies – strategies of personal understanding in a context of conversation with the world, and with significant others. This is the crux. We cannot form or apply any sort of concept except by jumping to conclusions that (in the absolute, classical sense) are never really warranted. Their epistemic value – their value as descriptions of what is the case – depends on the integrity of the whole cognitive and discursive process.

As a matter of experience, errors in all three types of judgment are very common. For example, in a (Type 1) error of grouping, some people still think of the constellations of the zodiac as real entities possessing definite influence on their lives, and perhaps cannot see their own families as entities of comparable reality. In a (Type 2) error of category selection, the hunter mistakes a cow for a deer and shoots it by mistake. In a (Type 3) error of concept stabilization, people long thought that whales and dolphins were fish, and that elderly women were dangerous. The ineluctable variance in our use of concepts is not just a nightmare of classical philosophy, but a fundamental condition of intelligibility itself.

Abstraction and Instantiation

At the core of the conversational assimilation of experience to the available categories of some particular language, a double movement can be discerned, comprising a kind of semantic cycle, through which general concepts and particulars are inextricably woven together:

1. *Abstraction* is the iconic movement from the particular toward the general. It is the process of stripping away all “inessential” properties of a thing, so as to focus on the “essential” ones in a bare-bones”, schematic fashion.
2. *Instantiation* is the descriptive accumulation of symbolic qualifiers from the general toward the particular – progressively sharpening the description and narrowing the set’s membership until, at the limit, a unique entity is specified.

To see this cycle at work, think of the icons for “Man” and “Woman” found on the doors of public toilets. These stick figures represent ultimate abstractions from men and women in Western attire: The male icon is a very simple diagram of head, torso, arms and legs. The female icon shows the same body parts, with a triangular flair between waist and knees: a skirt instead of trousers. Neither figure is anything like a realistic drawing; neither resembles what it purports to represent. And yet we readily recognize them as quintessential Man and Woman, standing in clear contrast to each other – inviting one sex and warning the other to stay out. The two icons together form a very simple system of distinction, marked by a single conspicuous point of contrast. Icons of every kind work in this way – splitting a domain of experience into a system of contrasting terms that are distinguished, one from another, by conspicuous differences of detail. The development of such icons works toward progressively more schematized (i.e. less detailed and individuated) drawings until an ultimate is reached that seems to represent almost pure concept, with no individual traits remaining.

Going back the other way, suppose I tell you that I am meeting a woman for dinner this evening. The word “woman” in this sentence is not more suggestive than the corresponding icon, representing pure concept without further qualification. But if you ask me what she looks like, I might begin to add descriptors that would gradually add up to a detailed verbal “portrait”: that she is fifty-ish, handsome, just slightly taller than I am, with brown hair now beginning to grey, etc. Every word of this description represents a generic concept that could do duty in an infinity of other cases. However, suitably assembled in correct English syntax, they begin to converge, and could finally serve to specify the unique woman. The point is this: Where iconic imagery begins with particulars and move by progressive abstraction toward a generic concept, words and other symbols begin as generic concepts and accumulate

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towards the description of some particular entity, process or situation. Particulars are seen and remembered in terms of generic concepts which they possess or lack as “traits.” Concepts and iconic images evolve in conversational usage toward serviceability as distinguishing markers for importantly different situations that arise in the real world.

It is as if the brain were provided with two complementary cognitive systems working in opposite directions: Iconic representation works from particular situations toward a repertoire of abstract concepts; Symbolic representation uses this repertoire of concepts to build descriptions of events and situations. The iconic system seems much the older, both in the evolution of species and in the development of individuals, but in humans today the two systems correspond roughly to so-called “right-brain” and “left-brain” cognition.

A brief digression on the ethics of conceptual thinking may be in order here: Although these two systems are obviously complementary, most people show some leaning toward one or the other. There are “picture-people” and “word-people”; and it is surprising how much hostility can arise between them. At several times in history, “people of the Book” have set out to smash the idols in a frenzy of purifying zeal, directed against persons whose preferred style of worship was less conceptual and more sensuous. At other times, “pagans” or “idolaters” (who, for obvious reasons, have usually been handicapped by a bad press) have risen against “the tyranny of words.” Such a revolt against language occurred in the ’sixties, as one aspect of the drug movement. Hippies were not supposed to be articulate. Language could only dull one’s senses, and blunt the intuition. Speech above the level of the expressive grunt was politically suspect – like middle age itself.

These outbreaks of cognitive warfare between “picture-people” and “word-people” are less surprising when we contemplate the very considerable possibilities of language as an instrument of political power. With its mastery of the hypothetical, language is the indispensable tool of law and planning and bureaucracy – limited, however, by its reliance on generic categories – like C-A-T for the class of cats, which cannot do justice to the individuality and uniqueness of any particular cat. Worse, abstract concepts (like *beauty* or *manliness*, for two presently troublesome examples) set a norm, a standard, that individual cases will never perfectly meet. Accordingly, there is a chronic temptation to judge the case against the concept; and when the case is a person, or any living creature, there is potential for real cruelty. The Greeks had a legend about a bandit named Procrustes, who used to offer travellers a dubious hospitality – giving them his own bed for the night, but then either

stretching or chopping them to make them fit. Words and concepts can be abused in just this way.

The Western philosophic tradition has been mistaken in its tendency to think of concepts as God-given and static. This was possible only because people had little documented experience with other concept systems, nor with the drift of their own over time, and had not overcome (as we are still finding difficult) the instinctive sense that our own cognitive habits are natural and right, while those of others are perverse and wrong. That we know better today can be seen as a considerable victory for philosophy and reason, although to many it seems more like a defeat. But today we can see clearly that the particularities of experience constantly resist and slip away from the categories we use to describe them. Language – in technical, literary, and every-day usage – must be adjusted constantly to keep up. The tension between language and lived experience is perennial both in the cognition of the individual, and in the whole conversation.

The Structure of Concepts

Around each concept there collects a mass of knowledge that artificial intelligence researchers have called its “frame,” but that I prefer to call its “lore.” The word “frame” emphasizes the rigid, structural aspect of concepts, and invites representation as a data structure. The word “lore” is preferable for us, because it draws attention to the open-endedness of conceptual knowledge, de-emphasizing the structural aspects of the concept for its referential and associational aspects. In doing so, it suggests why conceptual disputes are inevitable, and how such disputes may be resolved.

The lore of some given concept can be thought of as a context of possibility and expectation. To begin with, it locates that concept within the (metaphysical) lore of the word “*concept*” itself. It tells us whether the idea in question is a thing, a quality, an *action*, or what have you. It tells us what kind of other concepts this one can be associated or contrasted with, and on what terms these associations can occur.

For example, if the concept is a *thing*, we expect it to have other things as its *parts*, and to be itself a part of some larger thing. We expect it to have *properties*, some of which are *essential* (in the sense that if they were altered, the thing at point would no longer be itself, but some different thing). We expect it to engage in certain kinds of actions, and to refrain from other kinds, by virtue of the kind of thing it is. For example, we expect to find a hammer in a tool kit or a carpenter’s shop. We expect it to be used by people like builders or furniture makers. We expect it to have a handle and a head; we expect that the handle may be equipped with a grip, and the head with a claw. We expect that it will be used primarily for driving nails, but are aware of

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certain other uses. If we are knowledgeable about such things, we will be aware that there are different kinds of hammer, designed and specialized for different purposes. And so on. Potentially, someone could write a book called “All About Hammers.” Probably, someone has.

Another example famously shows what can happen when concepts refuse to dovetail due to discrepancies of lore: “Green ideas sleep furiously.” Although there is nothing wrong with the grammar of this sentence, it refuses to make sense. One can sleep peacefully, or fitfully, or exhaustedly, but there seems to be a contradiction involved in “sleeping furiously”; and no one can tell what is meant. And then, what are we to understand on being told that *green* ideas are sleeping? Here there is no contradiction, but a kind of emptiness. Ideas are just not the sorts of things we normally think of as having colour, or as going to sleep. And yet one can give the sentence a kind of sense in some appropriate context: If we were talking about ecological sentiment in some country where Save-the-Earth movements were just about to gain influence and power, then the statement “Green ideas sleep furiously!” would carry meaning.

One aspect of *lore* demands special attention. As the structuralists emphasized, every concept exists as part of a whole family of concepts with similar or contrasting meanings, that are potentially interchangeable in a given context. Many such families (e.g. good/bad, large/small, rich/poor) allow the speaker a simple binary distinction between polar opposites. Other families (e.g. animal names, tool names, colour names) provide a whole system of distinctions in a given field. For example, as part of the lore surrounding the concept of colour we find (in English) concepts and words like *white*, *black* and *grey*, *red*, *orange*, *yellow*, *green*, *blue*, *violet* and *brown* in general use, along with a host of other, more specialized or technical colour names in use mainly by painters and decorators. Structuralist thinkers noted that some languages make do with as few as four, three or even two colour names, and drew the conclusion that the meaning of a word depends only on those of its complementary words.

This is wrong. The meaning of a word (potentially different for each of us) includes the whole structure of lore that surrounds it, which is itself determined by our whole experience with the concept that the word has come to represent, and with its related concepts also. For example, the meaning of the word *green* is determined not just by its contrast with the other colour names, but by its association with trees and grass and ocean water. The meaning of the word *car* is fixed by its contrast with other words (like *bus*, *truck*, *horse*, or *motorcycle*) but also by our understanding that cars have steering wheels, gas pedals and brakes, engines, gear trains and rubber tires; that they are driven

on streets and roads; that they are supposed to stop for red lights; and so on. It is fixed too by our more personal experience of cars that we have driven or been driven in, that we have bought or could not afford, perhaps that passed us by or ran us off the road when we were hitch hiking . It is evident, then, that my idea of a car may be significantly different from yours, and that the meaning of the word “car” will be correspondingly different for each of us.

Conclusion

From our discussion here and in the previous chapter, it will be clear that concepts and categories are neither god-given and canonical, nor wholly arbitrary. We cannot say they “cut reality at the joints.” Indeed, where category boundaries become fuzzy and contentious, they cannot be said to cut at all. Except where a well-established word cleanly cleaves the public, cognitive space into a set-like category and its complements, “cutting” is not the happiest metaphor for what concepts do. They are better thought of as drainage pools or catchment areas, toward which experience tends to flow, and which are often swampy around the edges. Like a pool of water, the exact shape of the concept may vary over time, and may leave room to argue how it should be drawn and which cases it should include. Yet it is there for a reason: For a concept to evolve in some conversation, there must be experience which is not collecting elsewhere; and there must be the equivalent of a “lowland” or “basin” in the cognitive landscape, just where it is needed. Think of this depression as a kind of *negative salience* among one’s memories of similar experiences. A certain memory “stands out” (or rather, “*sinks in*”) as a locus for comparison and recognition of similarity. Once experience begins to flow toward such a basin, it wears a groove for itself as water does, etching its gully deeper and deeper. Conversely, where there is experience that is not collecting elsewhere, it is predictable that a sentient, language-using creature will evolve convenient words and concepts to drain its flooding experience.

Here, indeed, the metaphorical nature of language is most clearly visible. Every word, every concept represents a kind of metaphor because it raises an analogy between present experience and something else – something not present, but remembered. It would not be remembered if it were not somehow memorable (salient), and the comparison would not be drawn if it were not felt to enhance understanding – improve one’s grip, somehow – on what is being compared. For example: A few years ago, the community of computer users needed a word for the little gadget that moves the cursor around the monitor screen. Because of its size and shape and colour, and its cosy nestling under the hand, it came to be called a “mouse”, a word that is probably more in use today for the device than for the rodent.

“Cursor” and “monitor screen” are just as much metaphorical coinages, but

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more remote in time and “faded” by usage, so that their metaphorical nature is less obvious. Indeed, all language works this way: Every generic concept recognizes and invokes a similarity among the instances it collects, and will be both “natural” and contentious for this reason. The similarity is recognized and felt to be vivid, obvious and useful – not necessarily by everyone, but by enough speakers to give the word its currency. The more this similarity is invoked, the more habitual its recognition becomes and the more natural the concept seems. At the same time it remains potentially contentious, since at any moment, someone may appear to challenge the alleged similarity and assert what he feels to be a significant difference.

6.3 Statements

Where the naked concept merely suggests, the statement asserts; and what it asserts, classically, is its own truth. A statement like “The cat is on the mat” really means “It is true that the cat is on the mat.” It means, “This statement – ‘The cat is on the mat’ – is true.” In polyphonic domains, the force of the statement is much subtler. What the statement now asserts is its adequacy and reliability (but just for present purposes) as a representation of a situation. Its claim is no more than that the thing in question can be seen in this suggested way, and that this proposed way of seeing will suffice for purposes at hand. We can put the change more simply like this: In a classical regime, the statement asserts itself as a truth. In a polyphonic regime, it asserts itself as one honest and worthwhile interpretation among others. From this basic change, a number of conclusions follow:

The first of these we saw in the last chapter: What the statement now asks for is not *belief* in the classical sense, but a combination of cognitive investment and practical reliance that we have called *commitment*. As we’ve seen, it is a category error to worry whether an interpretation is true or false. The interpretation asks simply to be relied upon – by somebody, in the context of some particular purpose. If it does not claim an excessive commitment, if it serves well as a cognitive strategy for its purpose, and does not betray the trust it encourages, then it does everything that can be asked. If we wish, we can attribute a kind of “truth” to interpretations and understandings that pass muster in this way; and in casual usage I continue to do so, just like everyone else. But we must then admit that truth is context-sensitive. Thus, for many purposes, it is sufficient to think of the Earth as spherical in its general shape. Its flattening at the poles need not be taken into account by historians, for example; for other purposes, some correction will be essential. So: Is “The Earth is round” a true statement? Well . . . that depends why you are asking.

In classical logic, the statement stands on its own. The sense of a well-formed statement is supposed to be unambiguous, and is supposed to be absolutely true or false, regardless of who makes or hears it. In hermeneutic logic, by contrast, the interpreting subject is tacitly present in the statement, which is always a description of how things seem to him. We might go further: Traditional logic takes for granted the existence of *subjects* who use their concept vocabularies to make well-formed, true-or-false statements. For hermeneutic logic, the speaking subject is himself a construct of conversation (e.g. a politician with his advisors and speech-writers, a media “personality” – or any person, in any role whatever), who must be interpreted in some inter-subjective context before his statements can be understood – much less, have their epistemic value determined.⁴

In a hermeneutic logic, the *statement* represents a special type of suggestion – namely, a suggestion to form commitments to a certain interpretation.⁵ As such, it lacks epistemic value, except insofar as it comes from some trusted source who backs it with his reputation. As suggestion, the statement can be no more reliable than the author who vouches for it. The epistemic value of the suggestion, we might say, derives from the integrity of its author’s witness to that whereof he speaks. This is only common sense, of course, yet it is often overlooked. To some degree, there is a willing suspension of disbelief for information that we find in our data banks, or read in our media. We tend to accept it without question, because it would involve so much work to question in any serious way. We tend to accept many written statements without looking very hard at who wrote them, for which purpose, and with what justification.

The statement’s negation is shifted correspondingly. In classical logic, no statement can be true and false at the same time. That would be a contradiction; and to demonstrate a contradiction is to catch the speaker in absurdity. In hermeneutic logic, a statement and its negation are not mutually

⁴ Nietzsche’s point that all cognition is ultimately a matter of interpretation must itself be understood in a hermeneutic context – since it is itself a rather fancy interpretation that cannot be true or false in the traditional sense. In every particular case, it is finally a matter of philosophical commitment whether you regard a way of understanding as “invented” by some creative mind, or forced upon that mind by evidence and argument, (and hence “discovered”). Moreover, the meaning of this point only emerges in the context of some further purpose. Used by one writer to argue for a complete relativism, it can be used by another to argue some version of pragmatism, or by a third – as in the present essay – as the point of departure for a reconstructed, conversational concept of reason.

⁵ Suggestions of affective state are called *expressions* or *exclamations*. Suggestions to do something are called *requests* or *commands*. Requests or commands to supply information are called *questions*.

exclusive. To the extent that both represent tenable, serious positions (as indeed is often the case) they are complementary poles of a tensegrity. As such, neither is complete unto itself. It is the tensegrity of commitments that we must re-construct when we want a complete story about some issue.

6.4 Inference

In classical logic, inference means the drawing of valid conclusions from accepted premises. In hermeneutic logic, we do not so much draw conclusions as jump to understandings. This jump may or may not be appropriate and useful, but it is not *valid* in the formal, classical sense. Hume's recognition of this point in connection with the notion of cause-and-effect marks the beginning of the end of traditional philosophy: Neither induction nor deduction afford compelling justification for the inferences of science and everyday life. It does not follow that we are wrong to draw these inferences – only that they must be deployed with caution and justified on a different basis.

Consider the following example: From behind, we see a person whose build, dress, hair style and walk are those of someone we know. We recognize her; we call her name; she turns. We were expecting a certain face, and then we see it. Or perhaps we are surprised to see a stranger.

Or consider the following excerpt from an imaginary paper on Shakespeare's *Hamlet*:

The play's frequent references to doubt, and the stark contrast between its indecisive protagonist and its blustering minor characters – Laertes, Fortinbras, the gravedigger – reveal its focus on what we might call personal epistemology: the construction and validation of personal understanding. Indeed, Hamlet's quest for *sureness*, and his failure to achieve it until the last moments of his life, are the axis of the tragedy. If we accept that *Hamlet* is about the impossibility of achieving the knowledge necessary for life, then the madness of Ophelia becomes intelligible at once: The prince only feigns insanity to buy time and gain some freedom of action. Ophelia's own passive, trusting wits are overwhelmed for real by conflicting messages and events beyond her understanding.

In each case, the pattern of reasoning is circular: We jump to some over-all understanding, suggested to us by the cues available. This understanding, in turn, becomes a paradigm for further interpretation until it proves untenable – at which point it is adjusted to accommodate the new information or, eventually, discarded for some wholly different understanding. We are never certain that our understanding is "true", since embarrassments may appear at any time. We lay our bets, and hope for the best. The scientist's understanding works in

much the same way. Theories are “jumped to” as hypotheses that account for the observed data. Successful ones are provisionally considered “true,” and deployed as strategies of understanding, pending their embarrassment by further experience.

In whatever field, understanding ultimately rests upon the self-consistency of a hermeneutic circle of interpretation, and becomes relatively stable when this cycle of interpretation subsides into equilibrium. With familiar objects, this normally happens below the threshold of consciousness, before one has time to be aware of any interpretive process. But even in the most ordinary communications of daily life, there is room for ambiguity and puzzlement: “What did she mean by that?” Either the words seem to mean elusively more than has been expressed on the surface, or one feels one has been “reading in” much more than they were meant to convey. Only when the whole message and its separate components come together in stable fashion are we satisfied that we have understood. But then, it may at any time turn out that we were mistaken.

By this circular, *hermeneutic* pattern of inference, the mind travels from parts to whole, from whole to parts, and then around this loop – from understanding to understanding – in an endless cycle. Let’s discuss these movements in turn:

From Whole to Parts

(Instantiative Inference: Justified Expectation)

A first type of inference is at work when we apply any generic theory or skill to a particular situation. Routine cooking, routine medical practice – indeed, any routine at all – are paradigmatic examples. The practitioner has acquired a certain practical understanding in some area – a repertoire of concepts, beliefs and skills – that can be applied to the situation at hand. This repertoire represents a cognitive commitment. Whether or not it is avowed or even articulated, it represents a considerable, and staunchly held investment. To it the practitioner entrusts himself in his daily labours, and it is not lightly abandoned.

A great many such commitment-repertoires together comprise a *culture*. Language has received the most attention from philosophers, but many of our commitments (and these the deepest) are tastes and sensibilities and habit patterns that we could not begin to put into words. They are so unconscious and automatic that we don’t think of them as commitments. We scarcely think of them at all.

From these generic commitments we “infer” a suitable response to each situation. I recognize a *type* of situation; and, from my repertoire for that type, I know how to proceed. For a trivial example: Wanting a cup of coffee in the

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morning, I put a filter in my electric coffee-maker, and measure out a few scoops of ground coffee. Then I fill the glass pot with cold water, pour the water into the machine's reservoir, replace the pot on the machine's warming pad, and flick the switch. About five minutes later, I expect to find a pot of hot coffee. Every morning I infer this sequence of activities and expectation of its result, from a generic pattern of coffee-making, acquired so long ago, I have forgotten when. My daughter, whose mother grew up in Egypt makes coffee in the Arab way – by boiling a finer ground in a small tapering pot. Her coffee tastes different from mine, but I know what to expect when I have coffee at her house, as she does at mine.

The inference pattern for making coffee (or doing anything else) resembles the familiar syllogism: "Coffee is made by proceeding in such-and-such fashion. I want to make coffee. Therefore, I must proceed in such-and-such fashion." Expectations that the sun will rise tomorrow, or that the cow in the distance is really an animal and not a cardboard silhouette, or that death for each of us is only a matter of time, are really inferences of the same kind. In each case, we reason by applying some model (accepted as a cognitive commitment) to the particular case. Such reasoning depends on an assumption that the model is valid for the case at point; and that assumption is always moot. How do we know, really, that tomorrow will be a day like all previous days? How do we know that Socrates is a man like previous men? In each case, there is act of faith involved, that my trust in the learned model will be justified by the event. This trust is sometimes betrayed. Sometimes, I set out to make coffee in the usual way and fail because the stove blew a fuse, or because the power grid is down.

Formal deductive logic may be seen as a special case of this more general *instantiative* logic. The conclusions drawn by the latter may be articulate or unconscious; they may have been learned through personal experience, or conveyed to us by others, or hard-wired into our nervous systems by a million years of evolution. They may continue to be reliable or they may fail us at any time.

Commitment to a general model, theory or pattern is the "major premise" of instantiative inference. Perception that some particular case fits this pattern is the minor premise. Our actual behaviour and its expected results are the conclusion. What we do is the sort of thing one does in this sort of a situation.

From Parts to Whole

(Constructive Inference: Clever Cognitive Packaging)

A different, and complementary type of inference is seen in the "Aha!" phenomenon, where a new understanding of something previously mysterious

comes triumphantly into focus. An example is the famous “Eureka!” incident, when Archimedes ran naked through the streets of Athens in the excitement of his insight.⁶ Just the reverse of reasoning from generic understanding to particular case, we leap from case to understanding. With instantiative inference, the logical jump is in our assumption that this situation is to be treated as an instance of some general model or rule. With constructive inference, the jump is in the assumption that our experience will prove typical, and our generalization from it reliable. Neither “deduction” is formally valid, but they are good bets: They turn out well more often than not.

Constructive inference and insight are mysterious: We don’t know how they work, and we don’t know when they will happen. No rules can be given: Somehow a *gestalt*, a cognitive whole, emerges from the diverse experiences or component parts. We see pattern where there was none before; or we see a different pattern than we saw before. We alter our understanding of cats in general from our experience with this particular cat.

Understanding need not be articulate. Whenever things fall suddenly into place – so that we see pattern where we had seen chaos and disorder; so that we feel grace and sureness where we had felt clumsy and awkward; so that our way lies clear before us, where previously we had not know how to proceed – a kind of induction seems to have occurred, whereby experience takes on an order, a direction it had not possessed before. Through some unknown process of construction, we have inferred a generic skill or mental model from our experience of particulars. From this we obtain guidance in new situations, through the patterns of instantiative inference described above.

Around the Circle

(Recursive Inference: Integrity of Conversation)

A third type of inference is based on the iteration of these other two, the coils of reasoning twisting around its object in endless cycles of feedback and cognitive refinement. Our progress toward any complex understanding or skill – violin playing, dance, brain surgery, the writing of a complicated book – exemplify hermeneutic reasoning at its richest. In any prolonged cognitive effort, the hermeneutic circle will be traversed many times over. Time and again, a present state of generic understanding will be tested against specific problems, break its teeth on these, and be thrown back in doubt and confusion. Time and again, if the student is patient and honest in his bewilderment, a deeper, more flexible understanding returns at last. This repeated movement is not a circle,

⁶ The “flash” was that he could measure the volume, and thence the density of an irregularly shaped object – the king’s crown – by measuring the rise in the water level when the crown was immersed in a tub of known surface area.

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but an evolutionary spiral. It moves forward – albeit not in any predestined or determinate way – and can itself be seen as a chain of reasoning, with each successive state of understanding inferred from the one before:

- 1) From experience and discourse, a preliminary understanding develops.
- 2) In attempts to apply and articulate this understanding, further experience is gained, and further discourse takes place.
- 3) New experience, in turn, destabilizes understanding, leading to periods of confusion, (actually periods of cognitive growth), from which some richer understanding emerges.
- 4) Recursively, this new understanding enables further experience and discourse, enlarging on what had been possible before.

For the adepts of any discipline, this spiral never reaches a final state of perfect mastery; but it does find interim states of relative stability, where big surprises are rare. Interestingly, at this limit, understanding is usually polyphonic. No simple structure of flat Aristotelian truths could represent the understanding of a creative theoretical physicist or a software engineer, let alone that of a great musician, or a master potter. The craftsman knows too much: He knows the exceptions as well as the rules. He knows that the mysteries of his craft can be articulated in any number of different, superficially conflicting ways, which are all of them right, and all wrong. He knows how to suit the explanation to the pupil, and the tool to the task. Even his values are flexible, and tend to re-shape and adapt themselves to his immediate situation – to the unique occasion of each performance.

Then too, the understanding of adepts in any field tend to be subtly or even grossly divergent – depending on the backgrounds and baggage they arrived with, the teachers they studied with, the projects and pupils they confronted. In some ways, the masters resemble each other much *less* after thirty years experience than they did as novices. Managers, in search of predictable, competent performance, do not want to hear this; and it terrifies beginners. But it is true none the less: Three years of training (give or take) will teach a pupil the basic ideas and techniques of his trade. Thirty years of good practice will teach him how much he doesn't know, how much (and how little) freedom he has, and how to find self-expression in its discipline.

What does all this learning and experience have to do with *Truth* and *Knowledge*, as philosophers traditionally conceived them? This question goes to the core of the philosophy of knowledge; and it is one of the great questions.

The master's understanding will not be absolute or universal. Masters will often disagree, and there is no reason to think their understandings must

ultimately converge on all points. There are many fields of knowledge where lore and technical skill have steadily accumulated from the beginning, but which are still divided by the same basic issues that vexed their founders. And it is both likely and desirable that at least some of the current argument in any field – its current polyphony – will be internalized by every competent practitioner, so that he himself has no rigid opinion on the matter. Even then, when we have accepted that Truth is polyphonic in nature, there is still no guaranty that the understanding of any individual, or of the whole conversation, will come to map the diverse possibilities of “things as they are” in any reliable way. What can be said, I think, is that the spiral of experiencing and theorizing represents a form of inference yielding results whose long-term knowledge-value will depend on qualities of integrity to be discussed in the next chapter. We could say simply that the “truth” of these results will depend on a certain quality (I call it *integrity*) of the experience that produced them, except that we have no independent way of knowing what truth means.

To summarize then: When we speak of hermeneutic inference we have three patterns in mind:

- *instantiative inference* moves from generic skills and understandings to specific moves and expectations in a particular situation.
- *constructive inference* abstracts and generalizes from detailed experience toward a schematic grasp thereof; and
- *recursive inference* iteratively cycles through constructive and instantiative inference, moving toward successively richer, more comprehensive modes of generic understanding, and better grasp of the cases that arise.

Understanding, even circumscribed or deluded understanding, confers what we have called existential sureness: the confidence that a healthy human animal needs to feel it is on top of things, and able to cope with its situation. Such confidence is not surrendered lightly. Usually, an understanding must suffer intense and long-lasting embarrassment before it is seriously questioned. No wonder, then, that some understandings prove so durable: Constructed so as to be immune to any possibility of embarrassment, their adherents would sooner die than forfeit the sureness they afford!

And yet, even the most hidebound understanding may become unstable, and be replaced finally by some new way of thinking – when the older way is repeatedly embarrassed by experience and discourse collected in its own light. In this sense, a cognitive strategy may prove inconsistent with itself, and may de-stabilize itself. At this point, some new understanding must be inferred from the experience and discourse that the older one made possible.

6.5 The Logic of Conversation

What I would call the logic of conversation is something larger than this

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recursive, hermeneutic logic. Mathematical chaos theory and the theory of self-organizing systems suggest that all recurring interactions must eventually settle down into stable patterns of inter-relationship. All systems, from atoms to galaxies, seem to have formed according to this same evolutionary logic of emergent structure. So we conjecture, at any rate. In particular, what we are calling the *conversation* – the exchange of suggestions by human suggesters – settles down into the stable patterns of social life. Artifacts of culture, both cognitive and material, evolve to facilitate and stabilize these patterns; and, from one perspective, the logic we have in mind is just the theory of this process, an aspect of sociology in its widest sense. Fully developed, however, the logic of conversation would be something more than a descriptive sociology, but tantamount to a grammar of intelligible social relationship – explicating pre-requisites for meaningful intimacy, play, work, trade, conflict, government, and all else that we do. The problem is to account for the evolution of intelligible, orderly, useful communication, and to explicate the pre-requisites of meaning and order when it is accepted that cognition is an active process, that interpretations are imposed by individual suggesters to “get a grip” on their private worlds, and that common understandings are the outcomes of an evolutionary and conversational process.

What we can now surmise about this logic of conversation is most conveniently discussed under four headings generated by a pair of natural distinctions that cut across each other: On one hand, is the distinction between *process* and *structure*: between the on-going or *diachronic* aspect of conversation, and its static or *synchronic* aspect at some point in time. On the other, there is the distinction between *global* and *local*: those features or properties that pertain to the whole conversation and those that pertain only to a small region of it – to a given participant, say, or a given transaction. These distinctions divide our field into four quadrants, to be discussed in turn:

LOGIC OF CONVERSATION	PROCESS	STRUCTURE
LOCAL	<i>engagement, relationship</i>	<i>context, signification</i>
GLOBAL	<i>destiny, fate</i>	<i>ecology, culture</i>

Local Process: The Logic of Engagement and Relationship

The first quadrant, *local process*, is that of engagement and relationship. By *engagement* we mean that state in which a suggester behaves intentionally toward some thing or person, keeping itself attentive and responsive to that entity's suggestions and doings. By *relationship* in this context, we mean a stable pattern of mutual engagement, through which suggesters are reciprocally attentive and responsive to each other. These definitions are convenient when we need to distinguish A's engagement with B from B's with A, treating them as two separate matters. For example, when a couple is on the verge of breaking up it is conceptually useful to distinguish his engagement with her from hers with him. However, when people share a roughly common understanding of their relationship, the distinction becomes pedantic, and the terms *engagement* and *relationship* can be used interchangeably.

Now, a first conclusion of conversation's logic is that attention tends to run both ways. When A is paying attention to B – as prey or mate or offspring or whatever – it is usually dangerous, foolish or both for B not to return this attention. Thus, one pattern we may expect to find in conversations right across the universe, will be that of mutual attentiveness between suggesters. We may imagine this as a generalized form of eye-contact – a paradigmatic example.

The interesting consequence of any such relationship is a pressure on each participant to organize himself as a coherent, competent agent. Thus, the intelligent squid in the oceans of Rigel 4 will need to construe each other (and themselves) as competent agents just as human infants learn to do, and for the same underlying reason: Anyone, anywhere can get more of what he wants and less of what he doesn't by performing and presenting himself as an integrated being with coherent intentions and plans – not as a fragmented being with sporadic urges and moods. We don't always succeed in holding ourselves together in this way, but we have strong incentives to do so: to mount a good show before others, and even for ourselves. Colloquially, this is called "getting one's shit together." Although the phrase is culture-specific, I think the results of failure to do so must be about the same everywhere.

It seems likely too that the basic patterns of conversational relationship will be the same for the Rigelian squid as for us; and we might guess that recognizable forms of predation and alliance, competition and conflict, play, gifting, commerce, dialogue, etc. will be found right across the universe, wherever suggesters are found. There is no claim here that these types of relationship must be exclusive or exhaustive, nor that all species and cultures will use them all, nor that they must be understood in some particular way. The point is simply that these patterns will be recognizable wherever found. However differently constructed, valued or charged with meaning, we would

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expect the basic . . . well, the basic *logic* of these modalities to remain about the same. They are, I am arguing, intrinsic, self-confirming possibilities of conversation.

The crucial requirement is for some degree of self-similarity or self-consistency: Patterns of identity and relationship could not be recognized if they obliterated themselves too quickly.⁷ Thus, in speaking of any conversational relationship, we can assume a degree of self-consistency sufficient to allow its recognition as such. Except for small variances and cumulative changes that will transform or terminate it in the long run, we can assume that any on-going relationship must maintain (or cyclically restore) its own pre-conditions if it is to endure. Accordingly, we can think of any relationship as an *eigenstate*⁸ of conversation – an *almost* self-reproducing pattern in the flux of activity and suggestion. Each type of relationship—such as *cooperation* or *trade* or *conflict* – can be thought of as a semi-stable pattern of conversation. These concepts themselves, through the suggestive influence of their very names, often suffice to establish or sustain the relationship in question. Thus, by a logic of self-confirming expectation, to be married means simply to think of one's self as married, to be at war means to think one's self at war – and to act accordingly.

As a relationship becomes established, its patterns of activity and suggestion will be assimilated to and stabilized by their own past history, and by the experience of the interlocutors in previous or vicarious relationships. Youngsters expect from their first sexual relationships what they have heard from their friends, read in books, or seen at the movies. Later, with their children, they develop a style of parenting based on their experience with their own parents. Something more than emulation is happening in such cases. They are further examples of the assimilation of present experience and activity to that of the past, to that of significant others, and to the patterns of a culture.

When suggests first encounter each other, a pattern of mutual exploration

⁷ For an analogy here, consider the quantized energy levels in the electron shell of an atom. With respect to the atomic nucleus, an electron can only exist at certain energy levels, namely those corresponding to a wave-length that fits a whole number of times into the corresponding shell circumference. If the wave-length does not divide evenly into the shell circumference, the electron (in its wave aspect) will tend to cancel itself out, and cannot be found there. In quite a similar way, observable patterns of living and relationship – family or work patterns, for example – must also tend to reproduce themselves from one day and year to the next, since otherwise they would not be patterns but one-time events.

⁸ This term derives from matrix algebra and quantum mechanics, where it indicates a state that remains unchanged under a given mapping of the state space into itself, as in a system's change from time t to time $t+\Delta$.

will commence, aimed at determining the possibilities of relationship. This pattern may be more or less cooperative, more or less adversarial; with attempts at withdrawal or concealment on one side or the other, or both, depending on what the parties fear and hope from each other. Or, the exploration may be more or less flirtatious, with the advances and withdrawals meant playfully or symbolically, and not to be taken seriously. Paradigm cases of exploratory relationship might be a first date, or the opening sessions of a negotiation – or two dogs in the park, sniffing each other up.

Even at this early stage, certain necessities begin to make themselves felt. For one thing, the ebb and flow of suggestion among interlocutors will tend to fall into a definite rhythm. This may be driven by a natural source, e.g. the daily and yearly planetary rhythms, or by some party external to the relationship as with a prospective couple meeting under a chaperon's supervision. Or it may emerge from the dynamic of the relationship itself, as in physical combat or sex. The need for temporal patterning is one basic feature of the logic of relationship. That for approximate self-consistency from one cycle to the next is another.

Local Structure: The Logic of Context and Signification

The logic of the second quadrant, that of *local structure*, is concerned with micro-arrangements for conversation among the parties to a relationship. Just by holding each other's attention over a period of time, interlocutors develop a common context, both institutional and purely cognitive, setting terms of reference for further conversation. This context does not yet amount to a common culture, but it will make culture possible. Of crucial importance in the present discussion, it will enable conventions of signification to evolve in a flux of suggestions that are not yet true signs.

Words and symbols belong to the realm of language; and, like other artifacts of culture, they evolve as global structures of conversation, as will be discussed in the next section. But, before there can be signs, there must be *associations* (as they are called) – glimmerings of connection between two separately recognized events, which in time may (or may not) create a stable relation between a *signifier* and *signified*. The simplest and earliest associations are established locally, through a linking of percepts construed as belonging to a common context. Thus, in time, for Pavlov's dog, the bell is associated with food, and eventually becomes a sign of food. Nothing about the bell intrinsically suggests food, but the bell comes to "*signify*" food for the dog through their repeated association in a common *gestalt* (whole context). It is the logic of context formation and association, the logic by which sensory events are able to suggest and signify, that we need to explore in this quadrant of local structure.

The logical chain runs from stimulus to suggestion, from suggestion to

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association, from association to sign. A stimulus, such as an infant might experience in a noisy room is not yet a suggestion like the gnawing in its belly that prompts it to cry. Contact with mother's body is an association, not yet a sign, that the gnawing sensation will soon be relieved. The word and concept of "mother" is not local to the immediate conversation between the infant and the woman, but global to the language, the culture and the whole social conversation in which their relationship takes place. As such, it belongs to the next quadrant, that of global structure.

A suggestion is a stimulus that suggests a certain response. A suggestion is always a suggestion to do something. The ringing bell and the smell of meat are both stimuli for Pavlov's dog, but before the experiment begins, the smell is a suggestion (to salivate) while the former is not. Basic suggestions are possible to the suggest because its nervous system is configured to respond to a certain kind of stimulus in a certain way – unless this response is inhibited by competing suggestions to the contrary. Whether this configuration is hard-wired or acquired through experience, or through some combination of these, is of no importance here.

For such configuration to occur, however, two pre-conditions must be satisfied. First, the stimulus itself must be treated as a discreet and recognizable event. Second, the suggested response must somehow be selected as appropriate to the stimulus in question. Both segments of the arc – the perception of the stimulus and the selection of an appropriate response – are subject to a kind of logical necessity. Logically, the stimulus must stand out as a figure against a background, and must be seen as similar to other events of that same kind. Logically too, the response must be appropriate to that type of stimulus: a judgment of appropriateness, at some conscious or unconscious or evolutionary level, must have taken place.

The human capabilities, shared with most advanced suggests, to distinguish figures against their typical backgrounds and to distinguish importantly different kinds of figures, evolved via the *logical* process of natural selection. Similarly, the conversion of suggestion into sign occurs through the logical process of empirical learning. Both processes depend on *induction*, a logic of associations whose rule is: "Expect what has happened before." Whether such inductions are justified, whether the expectations based on them are satisfied is beside the point, which is that the ability to recognize events as being (or not being) of a certain kind, and the ability to remember and anticipate event configurations are logical pre-conditions for adaptive learning. Such patterns of suggestivity and signification comprise the local structure of conversation.

Global Structure: The Logic of Ecology and Culture

The logic of the third quadrant, that of *global structure*, is that of evolution, whose scope is wider even than that of conversation since it is found wherever chaos submits to order in the absence of imposed design. In the physical sciences, evolutionary selection for dynamic stability seems to govern the structuring of systems at all levels, from the sub-atomic to the cosmic. In biology a similar process controls the origin of species, and the size and distribution of populations within the whole ecology and biosphere. In anthropology, this same evolutionary logic constructs and maintains the patterns of language and culture. We are now discovering that a similar logic governs the configuration of brains and the personal learning of individuals. The basis of this logic is an utter tautology: As Gregory Bateson put it, “Longer lasting patterns last longer than patterns that last not so long.”

We might take language as the prime example of conversation’s global logic, but what is true for language is true for every repertoire affording expressive possibility – music, painting, dance, architecture, what have you. In every case, a limited “vocabulary” of techniques and materials supports a combinatorial explosion of utterance. Here, probably, is the answer to the English schoolboy’s great question, “Why does everything in Spain look Spanish?” At one time, almost everything a tourist saw would have been fabricated from characteristically Spanish “vocabularies,” evolved for self-consistency and coherence. This is no longer true. At least, in the richer parts of town, we find the same styles around the world today, because the same “vocabularies” are available everywhere.

What we find in the logic of this third quadrant is that conversation is a self-stimulating “production system” that lifts itself by its own boot-straps. Constrained, to be sure, by available material resources, cognitive structures developed in the past set the terms for further expression. Of these twin constraints, the latter is by far the more important, once a minimum of the former is given. This is why conversations can thrive splendidly under conditions of relative scarcity, and why there is all the difference in the world between real impoverishment and the “genteel” poverty of the monk, the artist, the “distracted” intellectual, or the dispossessed aristocrat. This is why people and whole societies can strike us as impoverished, although rich beyond belief. Quite literally, they have more material wealth than they know what to do with.

In sum then, we are in the structuralists’ debt for their insights into the *relative* closure and self-consistency of language and all other global artifacts of conversation. Though it is foolish to think of these as hermetically sealed from outside influence, it is correct and important to be aware of them as providing (at any given time), a definite structure of expressive possibility. Whatever else

constrains and shapes it, pursuant to the logic of this third quadrant, that structure must be compatible with itself. Ammunition must fit the gun barrels; railroad cars must fit the track. Styles of dress, of manners, language and thought are somehow of a piece. So long as Spain remains a more-or-less self-contained society, everything one sees in that country will look Spanish.

Global Process: The Logic of History

The phrase “logic of history” is in bad odour today, Karl Popper’s charges in *The Poverty of Historicism* being widely accepted and largely correct. For several reasons, notably the chaotic instability of conversation, we can never know enough about a society and its conversation to predict the future with any assurance. It is sheer arrogance to set your favourite ideology at the end of history, denouncing all who oppose it as enemies of progress. Thus, it is prudent to begin this section by rejecting such tactics as categorically as possible.

This said, we are constantly forming expectations about the likely development and outcome of various conversations – various social processes – and cannot live without doing so. And our record in making such judgments is much better than chance. When seasoned advocates guess at the likely bias of a prospective juror, when investors guess at the development of a business or a market sector, when governments formulate policies to advance (what they conceive to be) a long-term national interest, they are in each case making judgments about the future course of a conversation. Admittedly, they are not making predictions in quite the same sense that astronomers do in predicting a solar eclipse. Accordingly, to avoid confusion, let’s reserve the word *prediction* for what physicists do when they calculate the future trajectory of a dynamical system from known initial conditions. Let’s speak of *forecasting* for systems (like the weather) that are predictable in a statistical sense – for which we can calculate a probability that there will be rain (for example) three days from now, but cannot know whether it actually will rain. Let’s speak of *anticipation* in connection with systems whose futures cannot be calculated even in a statistical sense, but for which reasonable fears, hopes and contingency plans are still feasible, based on the interplay of known interests, habits and intentions. Obviously, human conversations belong in this third category.

Anticipations for a given conversation are based partly on the stated intentions of the players, partly on estimates of their characters and capabilities and interests, but partly too on one’s sense of the conversational dynamic itself. In every intense relationship one can observe how this last sometimes works against the protagonists’ conscious purposes and interests. The game called

“Prisoner’s Dilemma” shows how two crooks can be made to rat on each other, against their collective best interests. A play by Jean Giradoux,⁹ written on the eve of World War II illustrates how a conflict nobody wants can be inevitable. Hegel gave us a delicious phrase, “the cunning of Reason” for this tendency of conversations to acquire a global life of their own – to the point of manipulating participants into foolish or self-destructive behaviour. Whenever two people get married, or two nations go to war *against their better judgments*, this “cunning,” or “logic” is at work.

Generalizations about how, and toward what ends a conversation will develop are hard to come by. In fact, there are only two patterns I’d venture to bet on: The first is articulated in the great dictum of William James, that “You can’t have enough of anything without having too much of it.” Or equivalently: “In the long run, you tend to get exactly what you want – good and hard.” The explanation is that when individuals, or whole conversations want something, they build routines and systems to produce it; and in the long term these systems lead lives of their own. For every human good whatever, it is easier to build a system to manufacture more of it, than to slow or stop that system once it is built and running. There is a children’s story along these lines to explain why ocean water is not drinkable: A boy once bought a magic salt mill from a sorcerer, and then forgot the spell to turn it off. . .

A second pattern, not unrelated to the first, is the tendency of conversations to invest resources in cultural facilities of all kinds, long past the point where such investment seems advantageous to most members. It is for this reason, probably, that marriages and civilizations break down: The carrying costs of infrastructure, artifacts and social arrangements become increasingly irksome in comparison to the benefits they afford. Some obscure law seems to be at work here: Complexity begets further complexity; and it is always much cheaper to build a system than to maintain it once it is built.

Be this as it may, fourth-quadrant process logic, or systems logic is the causal influence exerted by the dynamics of a conversational system on its individual components (you and me). Not only does any particular conversation exert formative pressures on its individual participants; conversation *as such* does so. Locally and globally, diachronically (as process) and synchronically (as structure) *conversation* is one “game” that creatures cannot help but play. For this reason, it is only partly correct to think of conversation as a rule-bound (and therefore, culturally embedded) “language-game.” Although particular conversations can fruitfully be studied in these terms, conversation *as such* transcends all boundaries of language and

⁹ Called *La Guerre de Troie n’aura pas lieu*, (literally, “The Trojan War Won’t Happen.” Translated into English it was re-named, *The Tiger at the Gates*.

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culture. It has features that are *not* culture-dependent, but intrinsic to the nature of the process itself. With necessary allowances made for differing conditions and circumstances, conversation is the same kind of process for all suggests everywhere – for all creatures, devices and systems that must be understood and dealt with from the intentional stance.

Subject to the same necessities wherever found, the exchange of suggestions in conversation is a universal process that overflows all channels, shifts all boundaries, and makes up its rules as it goes along – across all frontiers of individuality, culture and even biology. It follows that however difficult it may be to understand someone of the opposite sex, or class, or culture, or religion, or species, a basis for understanding always exists; and workable understandings are possible. In this sense, we may conjecture that no sentient, social being can be radically unintelligible to another. Whenever such creatures become engaged, a conversation starts up, and it is predictable that this must eventually lead to some degree of mutual intelligibility and accommodation amongst viewpoints that are not eliminated outright.

The logic of conversation contradicts those extreme versions of relativism that proclaim the mutual irrelevance of differing viewpoints and cultures. Rather, its claim is that no autonomous, sentient creature with a vulnerable, metabolizing body can be wholly beyond the comprehension of another such. Whenever such creatures (and their cultures) come into contact, they cannot just ignore each other. They must either learn enough about each other to avoid hostilities, or they must learn enough to do battle effectively. Either way, some conversation between them must occur.

Unless this universality is kept in mind, ideas of structuralism, culture-relativity and Wittgensteinian “language-games” are quite misleading. The evolution of some characteristic language game – some recognizable culture – is the predictable result whenever suggestions are regularly exchanged by humans (probably, by all sentient creatures), however diverse their backgrounds. This tendency of conversation to “cut channels for itself” – to evolve facilities and rules for its own convenience – is the central theorem of its logic, the central reason why cross-cultural conversation is always possible. There is no culture anywhere, nor can there be, that does not incorporate and implement the principles of conversation. Nor is there conversation anywhere that does not link its interlocutors with common culture.

In the last analysis, it is the logic of conversation that affords a possibility of reason. First, (well below and prior to the verbal level), it enables a climate of relationship in which reason can function: a pattern of mutual engagement, intelligibility, respect, and reliability. Second, it enables conventions of

signification, that make for articulate speech and thought. Finally, it teaches techniques of reasoning, a systematic application of understanding, articulation and inference via the logic we've been sketching. Of course, the logic of conversation cannot compel anyone to think or argue reasonably, any more than classical logic could compel them to do so correctly. But, like classical logic, it points toward and demonstrates a possibility of "reasoning"; and it warns us what to expect when the principles are violated. Through its structures, conversation between people and with the world gradually renders that world intelligible. When we violate those structures, our affairs become less and less intelligible, and we become increasingly frustrated by confusion, misunderstanding and conflict.