

12. Reality and Objectivity

1. On the subject of objects
2. Attending
3. Critical common sense
4. The objective truth
5. Real thoughts
6. Mindself and signself
7. Commending
8. Universes

On the subject of objects

You can learn a lot from optical illusions – especially if you believe that ‘seeing is believing.’ But there’s a real art to creating psychologically instructive illusions. One of the great artist-scientists in this field was Adelbert Ames Jr. (1880-1955).

Gombrich (2002) gives a detailed and illustrated explanation of how the Ames illusions worked. Most of them involved looking through a peephole at what appears to be a familiar object from that point of view, but from another angle looks like a very different thing (or no ‘thing’ at all). Even when the viewer has already seen the construction from other points of view, and knows how the illusion works, the illusory object still appears when viewed through the peephole. Gombrich comments that

What is hard to imagine is the tenacity of the illusion, the hold it maintains on us even after we have been undeceived. ...

One of the facts that Ames and his associates want to drive home with these demonstrations is that, as they put it, ‘perceptions are not disclosures.’ What we can see through the peephole does not directly and immediately reveal to us ‘what is there’; in fact, we cannot possibly tell ‘what is there’; we can only guess,

and our guess will be influenced by our expectations.

Gombrich (2002, 210-11)

In terms of our meaning-cycle diagram, 'what is there' (**W**) triggers a perceptual process over which you have no conscious control, and that's why *percepts* represent an *external* World to you. Nevertheless, the *perceptual judgments* which identify what you see (as this or that type of thing) are based as much on your perceptual habits as on what's really out there. It's not true that you see only what you want to see – but it is true that you see only what you *know how* to see. This know-how is a constituent of your habit-system which has been laid down by countless reiterations of the action-perception cycle over the courses of biological and cultural evolution and your personal history. Thus your 'map' or 'model' of the world (**M**) is continuously modified by experience to determine your expectation of what the world is *about to* look like. This modification is what we call *learning*, and it also determines what you are likely to *do* next – including where you will invest your attention.

In sum, there is no free will against the immediate commands of the images that perception presents to the "mind's eye." But through arduous practice and self-correction, it is partly possible to alter those images.

Bateson (1979, 40)

Gregory Bateson arrived at this conclusion through his personal experience with the Ames constructions, which he narrates in great detail (Bateson 1979, 35 ff.). From experiences like those, he inferred that 'all experience is subjective' (quoted before in Chapter 2). Yet that very general statement is itself *objective*, because it is a proposition based on close attention to perceived *objects* and observable results of experiments. 'Self-correction' (and thus a measure of self-control) is enabled by observation of objects *external* to the observing self.

Our knowledge of the external World, internally embodied in our habits, *grows* when the little current flows around the meaning cycle – but only if some gap opens up between Model and World, between expectation and reality, and some bolt of lightning leaps

the gap to close the circuit again. The *real* world must be *out there* beyond our belief, ready to surprise us, to capture our attention by countering our intention. This is the faith of an inquiring bodymind; and the other side of this coin, its necessary complement, is what Peirce called *fallibilism*: the belief that our knowledge of the whole Truth is necessarily partial and liable to error.

The only basis for accurately anticipating what will happen in the future is factual knowledge of what has happened in the past. Cognitive economy requires that facts be organized as *general* knowledge of regular relations among things and events. The basic logical form of the symbols representing these facts is the *proposition*. But not all propositions are true, and even if they are true, they can only be fragments of the *whole* truth. The facts with which any one human is acquainted are a vanishingly small proportion of human knowledge, and the sum of all human factual knowledge is vanishingly small compared to the sum total of facts we *could* discover if we had unlimited time, energy and opportunity for investigation.

Moreover, our fallibility is amplified in situations where we interact with other self-organized and partly autonomous systems (like ourselves), because their autonomy makes their behavior less predictable. But our guesses about what will happen next – or about the consequences of our own actions – are the signs on which we must rely at every turn of the path. Our *need* to read the signs presented by the world, or by other selves, exceeds our *ability* to do so; and sometimes our need to believe in the rightness of our readings can interfere with our guidance systems. Consequently the objects of our attention in a genuine quest for truth must be the dynamic *objects* of the signs constituting our reading of reality.

Semiotically, an *object* is a component of a sign relation. A *proposition* is defined by Peirce as ‘a sign which separately, or independently, indicates its object’ (EP2:307). The part of a proposition which verbally (or symbolically) indicates its object is called its *subject*.

The sentence “Roxana was the queen of Alexander” is a sign of Roxana and of Alexander, and though there is a

grammatical emphasis on the former, logically the name “Alexander” is as much a *subject* as is the name “Roxana”; and the real persons Roxana and Alexander are *real objects* of the sign. Every sign that is sufficiently complete refers to sundry real objects. All these objects, even if we are talking of Hamlet’s madness, are parts of one and the same Universe of being, the “Truth.”

—Peirce, EP2:303-4

We can also say that Roxana-and-Alexander is the (single) *dynamic object* of the sign (the proposition) embodied by that sentence. ‘Every sign has a single object, although this single object may be a single set or a single continuum of objects’ (EP2:393). An object, when analyzed into parts, can take on any degree of complexity, and the relations among the parts are signified by the *predicate* of the proposition. We test the validity of propositions by *observing* the external world, by *intentionally* paying *attention* to it. *Attention* is cognitive energy, the currency of the cognitive economy.

Attending

Peirce and Baldwin defined *observation* as follows:

Observation: Attentive experience; especially, an act of voluntarily attentive experience, usually with some, often with great, effort.

More or less fixity in the object is requisite. Indeed, experience supposes that its object reacts upon us with some strength, much or little, so that it has a certain grade of reality or independence of our cognitive exertion. All reasoning whatever has observation as its most essential part. Whatever else there is in the act of reasoning is only preparatory to observation, like the manipulation of a physical experiment.

— *Baldwin's Dictionary*

All genuine inquiry requires objectivity in the sense of

attentiveness to an object which is in itself 'independent of our cognitive exertion.' If our *attention* is dominated by our own *intentions* rather than respecting the independence of the object, this objectivity is compromised. The signs which interpret our *observations* have *dynamic objects* which 'react upon us' rather than conforming to our intentions, so that we know them as *external* objects. These may include dreams, mathematical objects, mythical beings and literary creations – even 'Hamlet's madness,' according to Peirce (above) – which have 'a certain grade of reality' by virtue of their having *already* been dreamed or imagined or created with definite qualities. Hence 'there is a degenerate form of observation which is directed to the creations of our own minds— using the word observation in its full sense as implying some degree of fixity and quasi-reality in the object to which it endeavours to conform' (Peirce, BD 'Index'). In any case, only observation of the object can tell us whether it really has the form predicated of it by symbolic thought-signs. This judgment can be made because the proposition in which the thought is embodied couples a subject acting as an *index* with a predicate acting as an *icon* (for only an icon can represent a *form*.)

The object of the inquiry game is to learn the truth, i.e. to know something not previously known, about the object. The first move is to formulate a hypothesis related to what we already know or suppose; then we investigate those relations until we can see whether the truth or falsity of the hypothesis is implied by what we observe in the course of the inquiry. The embodiment of this process, when it comes to a definite conclusion, is called an *argument*, the kind of symbol 'which distinctly represents the Interpretant, called its Conclusion, which it is intended to determine' (CP 2.95, 1902). But not every argument is conducive to genuine inquiry. An argument made with the intention of leading to a previously chosen interpretant (conclusion) *regardless of the observable facts*, or intended mainly to enhance one's reputation or status rather than discovering the truth, is not real inquiry. Susan Haack calls these (respectively) *sham* and *fake* inquiry:

The sham inquirer tries to make a case for the truth of a proposition his commitment to which is already evidence- and argument-proof. The fake inquirer tries

to make a case for some proposition advancing which he believes will benefit himself, but to the truth-value of which he is indifferent.

— Haack (1998, 190)

The class of fake inquirers would include those who argue mostly for the sake of ‘winning the argument.’ In both sham and fake inquiries, attention is intentionally misdirected: the intended interpretant, or the argument’s intended effect on the audience, overrides the actual observation (of a dynamic object) which is essential to genuine inquiry. Since genuine observation requires more or less sustained attention to a more or less fixed object, the intention to fix attention on that object (and keep it there for however long it takes) must prevail over any ulterior intention.

In one of his early essays, Peirce formulated the ‘fundamental hypothesis’ of science as follows:

There are real things, whose characters are entirely independent of our opinions about them; those realities affect our senses according to regular laws, and, though our sensations are as different as our relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really are, and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion.

— Peirce (EP1:120)

This hypothesis makes it necessary for empirical science to ‘follow the common’ rather than the idiosyncratic, as Heraclitus advised us to do (Chapter 2). The ‘knowledge commons,’ as Hess and Ostrom (2007) call it, is the informational equivalent of ‘the commons’ in any geographical region: it is not private property but is available for anyone’s use, as long as such use can be sustained. Knowledge or information which has become so broadly familiar that we call it ‘common sense’ belongs to what Peirce called the *commens*, and thus makes verbal communication possible: for as we heard in Chapter 8, ‘the common stock of knowledge of utterer and interpreter, called to mind by the words, is a part of the sign’ (Peirce, EP2:310). The same goes for all symbolic signs, whether

the public embodiment of the sign was created by an individual artist, manufactured by a corporation, or established by genuine scientific inquiry.

Since the truth is essentially public and not private, it is ascertainable by anybody who makes the effort to minimize his own conceptual idiosyncrasies. Such an effort is therefore a crucial part of scientific inquiry. This makes it more reliable than the 'method of authority,' or any 'private inspiration from on high,' because it is self-correcting in the long run. The method of trial and error *incorporates* doubt (rather than avoiding or suppressing it), using it to weed out some hypotheses in order to make room for better ones. This method is the default for all genuine inquiry, formal or informal: 'Everybody uses the scientific method about a great many things, and only ceases to use it when he does not know how to apply it' (Peirce, EP1:120). However, since it requires more time and energy than other methods of 'fixing belief,' we often take short cuts; and Peirce remarks that 'the method of authority will always govern the mass of mankind' (EP1:121).

Critical common sense

Using the scientific (common-sense) method involves recognizing some objects of our attention as more *real* than others. How do you know that what you see in front of you at this moment is not a hallucination? The simplest way is to ask other people whether they see it too. If they do, then you have consensus in the social domain, which is a key test of what we call *reality* – 'So much so, that testimony is even a stronger mark of fact than *the facts themselves*, or rather than what must now be thought of as the *appearances themselves*.... testimony will convince a man that he himself is mad' (Peirce, EP1:19-20).

There is another test of reality we can use when the trustworthy testimony of other people is not available: we can check for consensus among the senses. This is what Macbeth does when he sees an 'air-drawn dagger' leading him toward the king he is about to murder. Since he cannot *touch* the dagger, although he *sees* it to be within reach, he concludes that 'there's no such thing.' *Some* kind of consensus, then, is crucial to our sense of reality; but

its validity as a test depends on the independence of the partners in that consensus. To the extent that you *control* people (or your own thoughts), you can't trust them to tell you the truth rather than what you want to hear – another point vividly demonstrated in *Macbeth*.

Psychologists have investigated how humans actually make the pragmatic distinction between reality and illusion. M.K. Johnson, for instance, has studied the processes of *reality monitoring* and *source monitoring* (our evaluation of our memories and beliefs in terms of where they come from – actual experiences, imagination, stories told by others, etc.).

The characteristics of mental experience that provide it with the quality of reality are similar for perception, event memories, and beliefs: [1] sensory detail; [2a] embeddedness in spatial and temporal context; [2b] embeddedness in supporting memories, knowledge and beliefs; and [3] the absence of consciousness of or memory for the cognitive operations producing the event or belief. Reality testing of ongoing perception and reality monitoring of memories and beliefs are complex judgment processes that are subject to error and more difficult in some situations than others.

— Johnson and Raye (Schacter and Scarry 2000, 37) [the numbering is mine]

In the reality monitoring process, *beliefs* are both subject to testing and included among the supporting evidence by which they are tested: this circularity confirms that the process is another version of the meaning cycle. But [3] is especially interesting as a criterion because it reveals the default assumption that *reality must be independent of our cognitive operations* – or as Peirce put it (above), real things must be 'entirely independent of our opinions about them.' If you remember imagining something, or being persuaded to believe in something of which you have no direct experience, then that image or belief is ruled out as an *independent* reality. This is the root assumption of the habitual distinction between appearance and reality, and of the 'objective' stance which is intrinsic to common sense and scientific inquiry. Even prophets

who place their faith in privately 'revealed' truth rather than scientific method pay tribute to this principle when they insist (as they invariably do) that they have *not* invented or imagined what they reveal, but received it 'from on high' – a claim which is clearly irrefutable.

Sensory *detail* is an important clue because we know how vague and faint our imagined or remembered images are, compared to 'the real thing.' Thus criterion [1] above is crucial to *empirical* sciences. The practical reason for this is that science can only make sense in a consensual domain, which is difficult to establish without appealing to sensory experience. The prophetic or 'Poetic Genius' (Blake's term) also relies on vivid sensory detail and definition of form (usually visual but sometimes appealing to other senses), in conjunction with [3], to validate the reality of its content. If the prophet's conviction of the authenticity of his visions, and the follower's submission to his authority, are strong enough, they can override the 'embeddedness' criteria [2]. This would explain why nearly all religious systems urge believers to avoid entanglements with 'the world,' i.e. with the familiar scaffolding of socially sanctioned forms, institutions and habits which furnish us with 'supporting memories, knowledge and beliefs.' Avoiding 'the world' – or 'home-leaving,' as some religious traditions express it – allows a new guidance system to take root without having to be embedded in the old, because it removes criterion [2] from the believer's reality-testing process until the new belief can be 'embedded' in a whole new support system. Those who refuse to abandon the old support system and continue to apply criterion [2] will naturally regard the new system as a 'cult' and its claims to authority as fanatical.

All this reality monitoring, since its judgments are never quite conclusive, creates a constant background tension between reality and meaning; this is why we never feel quite at home in the universe, and sometimes go through a crisis where the tension comes to the fore. The main symptom of this tension is the feeling of what Peirce calls *dyadic consciousness*.

We all agree that we refer to the same real thing when we speak of the truth, whether we think aright of it, or not. But we have no cognition of its essence that can, in

strictness, be called a concept of it: we only have a direct perception of having the matter of our Thought forced upon it from outside our own control. It is thus, neither by immediate feeling, as we gaze at a red color, that we mean what we mean by the Truth; for Feeling tells of nothing but itself. Nor is it by the persuasion of reason, since reason always refers to two other things than itself. But it is by what I call a dyadic consciousness.

— from ‘The Bedrock beneath Pragmatism,’ c. 1906 (CP 4.553 Fn)

In direct awareness of a dyadic relation, self and other are polarized, and ‘the whole sense of reality is a determination of polar consciousness’ (EP1:263). Even though ‘everything which is present to us is a phenomenal manifestation of ourselves ... this does not prevent its being a phenomenon of something without us’ (EP1:38). Your own qualities and habits which make it possible for you to perceive something as an object do not prevent that thing from having its own qualities and tendencies quite apart from its being an object of your perception, and if it does, then it’s a *real thing* as well as a *dynamic object*. The same goes for its *relations* to other things: they are *real relations* if they subsist quite apart from your attention to them, so your dyadic consciousness of them is genuine. Anything participating in real relations, or having real qualities in its own right, was called a ‘subject’ in the pre-modern (pre-Cartesian) philosophy. In those terms, a real *thing* is a *subject* and the perceiver of that thing is *another* subject. Perception is a form of semiosis, and so is the process of learning *about* that thing, whereby the perceived subject becomes the *object* of the perceiver’s thought-signs. *Objective* knowledge from the perceiver’s point of view, if genuine, is really *intersubjective* to a third person who views the relationship between the two subjects objectively.

The objective truth

The tendencies of nature, the propensities of some events to follow from others in a more or less regular way, are what Peirce

called the 'logic of the universe,' because in reasoning about them, we suppose that the principles of reasoning reflect the principles of causality. The logic or 'thought' of nature is not subject to delusions like ours, and not capable of telling either lies or fictions, although its creatures who are autonomous agents can deceive or be deceived. If we believe that the laws of nature are real, i.e. that they consist of *intersubjective* relations, then our science at its best *aspires* to know those laws objectively – which means knowing them *fallibly*.

Peirce's 'fundamental hypothesis' of scientific method (above) – which he later (CP 5.407) called a 'cheerful hope' on the part of scientists – proposed that a genuine investigation would reach 'one true conclusion.' But according to Einstein and Infeld (in Chapter 10), the scientist can never be sure that his hypothetical model is the only one which could explain his observations. This would imply that if only one true conclusion is possible, it may still be represented (translated, replicated,) in more than one way: once again polyversity raises its many heads. 'Giving to the word *sign* the full scope that reasonably belongs to it for logical purposes, a whole book is a sign; and a translation of it is a replica of the same sign' (EP2:303). Since theoretical models are also signs, it is possible for two models of the same complex object to be *replicas* of the same sign, despite some apparent differences between them. A genuine dialog, then, could conceivably reach a consensus that different models are equivalent in practice even though neither can be fully translated into the other.

The possibility of a single *ideal* consensus which can be replicated in various ways brings us back to the final sentence in the Einstein/Infeld description of the scientist:

He may also believe in the existence of the ideal limit of knowledge and that it is approached by the human mind. He may call this ideal limit the objective truth.

In *Baldwin's Dictionary*, Peirce did not call it "objective" truth, but defined *logical truth* as 'that concordance of an abstract statement with the ideal limit towards which endless investigation would tend to bring scientific belief, which concordance the abstract statement may possess by virtue of the confession of its

inaccuracy and one-sidedness, and this confession is an essential ingredient of truth.'

In terms of our diagram, **W** (the external world or 'nature') is the point at which the semiotic cycle makes contact with Big Circumstance, the reality beyond our cognitive bubble, which is governed and ordered by the real laws of nature. The genuine inquirer believes that those laws can be discovered, but we can never really *know* that we have arrived at them, because we cannot compare our model with them. We can only compare our models with each other, and with our perceptual judgments. But the faith of science is that our knowledge will *approach* an 'ideal limit,' although we may never *actually* reach it.

How does *self-knowledge* fit into this picture? Can we discover or learn anything new by introspection, by 'turning attention inward'? Can the object of that attention have enough 'fixity,' or enough 'independence of our cognitive exertion,' to be truly *observable*?

We certainly appear to be 'self-conscious' or aware of 'subjective elements of consciousness' (Peirce, EP1:4). Indeed, many writers have asserted that if we are not *self-conscious*, we are not really *conscious* at all – not in the sense of that word which they say is peculiar to humans. But not even humans are *born* self-conscious, and this trait seems to take years to develop. We don't remember how we developed it as children, and even if we did, how much could we trust those memories, when even our recall of the more recent past is notoriously fallible?

What we recall is not what we actually experienced, but rather a reconstruction of what we experienced that is consistent with our current goals and our knowledge of the world.... What we call recollection can never be more than the most plausible story we come up with (or, perhaps, only a story which is plausible enough) within the context of the constraints imposed by biology and history.

— Westbury and Dennett, in Shacter and Scarry 2000, 19

What we call 'introspection' is actually *retrospection*. A memory, like a thought, is a process internal to the brain which has

both semiotic and physical aspects. As a sign, its object is something that happened in the past, its interpretant a present experience. We can formulate generic models of such processes, and then make observations of brain activity in order to test them, but this requires yet another level of brain process. One neural process can surely interact with another, but it cannot step outside of the interaction to 'look in upon' the other in 'real time.' Only an outside observer (with special equipment) can monitor a brain process in real time, and even if the technology available for doing that could be perfected, the current *experiencing* which is 'the feeling of what happens' in that process would remain unobservable from any point of view.

What *is* directly observable, however, is what Peirce called the phaneron, denoting 'whatever is throughout its entirety open to assured observation' (MS 337:7). The phaneron is the *whole* of the observable world; but insofar as every autopoietic system has its own world, the first (preconscious, instinctive) step in observation or perception is to carve up this world somehow. In terms of dynamic systems theory, the constant background hum of the nervous system must sort itself out into attractors, in order for the organism hosting that experience to play its part as an agent in its world. But as Gregory Bateson (1979, 42) put it, 'the division of the perceived universe into parts and wholes is convenient and may be necessary, but no necessity determines how it shall be done.' There is always more than one way for the 'uncarved block' to be carved up, for the implicit order of nature to explicate or express itself. Some ways of carving are more 'natural' than others, but they don't necessarily harmonize with our habits when we think we are "carving nature at the joints." Sometimes we have to guess where the joints are, and we don't have time to verify or falsify every guess exactly. Yet we know that nature carves up the phaneron into phenomena, and perception into percepts.

Real thoughts

We divide the world up into entities at human scale so that we can manipulate them in human lives, and this division of the world is an imaginative achievement.

The instinctive ‘carving up’ of the phaneron is the reverse side of the ‘binding problem’ in neuroscience. If we begin with the *integrity* of the (complex adaptive) system, its ongoing adaptive activity which is felt as the flow of experience, then the question is how it manages to *articulate* its world so finely, not how it manages to bundle discrete sense impressions into perceived entities. The myriad things, and their various features, are products of analysis; the parts emerge from the whole, not vice versa. But since the analysis is instinctive or preconscious, we take the entities into which it divides the world as ‘given’ in perception. And although our conscious analysis of the whole process regards it as ‘an imaginative achievement,’ a crucial part of that achievement is the distinction between *imaginary* and *real* entities. Likewise, we divide the world of symbols into fact and fiction, the world of propositions into true and false, and the objects of observation into realities and mere appearances.

We have seen above an account of ‘reality monitoring,’ but a psychological explanation like that tells us only how *humans* tell the difference between real and illusory percepts, or between true and false memories or beliefs. The more general question is, in logical terms, how *any* being could rightly distinguish between true and false appearances – or in metaphysical terms, which elements or constituents of the phaneron (if any) are *real*, or more real than others. These questions have been debated for centuries, especially between two schools of thought known since the time of the scholastic philosophers as *nominalism* and *realism*.

The question, according to Peirce,

was whether *laws* and general *types* are figments of the mind or are real. If this be understood to mean whether there really are any laws and types, it is strictly speaking a question of metaphysics and not of logic. But as a first step toward its solution, it is proper to ask whether, granting that our common-sense beliefs are true, the analysis of the meaning of those beliefs shows that, according to those beliefs, laws and types are objective or subjective. This is a question of

logic rather than of metaphysics – and as soon as this is answered the reply to the other question immediately follows after.

— CP 1.16 (1903)

Here the logical distinction between ‘objective’ and ‘subjective’ corresponds to the metaphysical distinction between realities and ‘figments of the mind.’ Nominalists believe that generalities (‘laws and types’) are mere ‘names’ and not real entities. This belief led Kant to the conclusion that we can never know the ultimate reality behind appearances: ‘things in themselves’ are unknowable because we have no access to them except through perception – and as the saying goes, ‘there is no immaculate perception.’

The form of any percept is constrained by the form of the perceiving bodymind, and only partly determined by the form of the external object perceived. Indeed, the bodymind has to take its own orientation into account in order to perceive at all. Antonio Damasio puts this in biological terms:

There is no such thing as a *pure* perception of an object within a sensory channel, for instance, vision.... To perceive an object, visually or otherwise, the organism requires both specialized sensory signals *and* signals from the adjustment of the body, which are necessary for perception to occur.

— Damasio (1999, 147)

Psychobiologically, the *quality* of sense experience is determined by the *form of the relation* between dynamic (external) object and (internal) nervous system. This is a general explanation of *facts* such as the actual color of a perceived object. It’s because an object can *really* be red (for instance) that we can arrive at a *true* explanation of how the feeling of redness can be connected with an existing object.

Nominalists tend to assume

that what is relative to thought cannot be real. But why not, exactly? *Red* is relative to sight, but the fact that this or that is in that relation to vision that we call being red is not *itself* relative to sight; it is a real fact.

From the biological fact that perception is not 'pure,' it does not follow that hallucinations are indistinguishable from more reliable perceptions. Likewise, the fact that all conceptions are signs does not prevent us from knowing the difference between true and false propositions, or between real and imaginary objects, or between real and imaginary *relations* between objects of general signs. Nominalism is therefore challenged by philosophical *realism*, especially the kind of realism espoused by Peirce when he argued that Thirdness is a real element of the phaneron.

The third category of elements of phenomena consists of what we call laws when we contemplate them from the outside only, but which when we see both sides of the shield we call thoughts. Thoughts are neither qualities nor facts. They are not qualities because they can be produced and grow, while a quality is eternal, independent of time and of any realization.... A thought then is not a quality. No more is it a fact. For a thought is general. I had it. I imparted it to you. It is general on that side. It is also general in referring to all possible things, and not merely to those which happen to exist. No collection of facts can constitute a law; for the law goes beyond any accomplished facts and determines how facts that *may be*, but *all* of which never can have happened, shall be characterized. There is no objection to saying that a law is a general fact, provided it be understood that the general has an admixture of potentiality in it, so that no congeries of actions here and now can ever make a general fact. As *general*, the law, or general fact, concerns the potential world of quality, while as *fact*, it concerns the actual world of actuality. Just as action requires a peculiar kind of subject, matter, which is foreign to mere quality, so law requires a peculiar kind of subject, the thought, or, as the phrase in this connection is, the *mind*, as a peculiar kind of subject foreign to mere individual action. Law, then, is something as remote from both quality and

action as these are remote from one another.

— Peirce, CP 1.420 (1896)

Mindself and signself

Turning our attention to the ‘peculiar kind of subject’ called the *mind*, we begin to see the deeper significance of the cognitive closure which determines the difference between its ‘inside’ and ‘outside.’ According to Stokes as quoted in Chapter 10, every object is known to be actually without the mind *because* it is known intelligibly within it. Experiencing both opens and closes the gap between internal and external reality. Although reality is external to (independent of) anyone’s knowing of it, that doesn’t prevent it being really known.

Our knowledge of the laws of nature is imperfect and fallible, and the laws themselves are not necessarily simple, eternal or exact. Nevertheless, whatever laws govern a type of situation really do determine what can happen in situations of that type. Genuine semiosis can likewise determine real knowledge of those very laws. Just as Heraclitus used the word λόγος for both the one law of nature and an account of it, Peirce uses the word Thought for both (a) the universal semiosis which *includes* us all and has all things (and their interrelations) for its object, and (b) the whole system of thought-signs constituting our knowledge of the universe – both of these being manifestations of Thirdness.

Our knowledge is necessarily incomplete because nature has not yet finished doing what it does, let alone saying what it means. There is always room for further investigation of any *type* of phenomenon, because its reality extends into the future as long as any recurrence or representation of it remains possible. But the investigative cognition of any kind of happening proceeds through anticipatory cycles, so that if and when it became wholly predictable (i.e. no prediction of it would ever be contradicted by actual events), then it would be wholly known. At this point any gap between appearance and reality, any difference in form between the thing itself as dynamic object and the immediate object of the thought-sign representing it, would be closed and investigation would have reached its end, its *entelechy*. We will

never *know* that we have reached this point, but we also don't know that we *haven't* reached it, for any type of phenomenon of which our anticipation has been consistently successful. Therefore, Peirce argues, the laws of nature are real, not just imaginary, and are in principle knowable, to the extent that experience can contradict our formulations of them.

Peirce arrived at this 'scholastic realism,' as he called it, in his early series of articles on cognition, before his semiotic had been fully developed (or even named). Yet even in this series, when he turned the light of realism on the mind itself – the one to whom phenomena appear, the interpreter of signs – he concluded that the interpreter is also an interpretant, that the person is himself a sign.

Such being the nature of reality in general, in what does the reality of the mind consist? We have seen that the content of consciousness, the entire phenomenal manifestation of mind, is a sign resulting from inference. Upon our principle, therefore, that the absolutely incognizable does not exist, so that the phenomenal manifestation of a substance is the substance, we must conclude that the mind is a sign developing according to the laws of inference.

— EP1:53

Peirce went on to argue that the difference between a man and a word is 'only relative,' although the meaning of the human sign is 'exceedingly complicated' compared to the meaning of a word.

The man-sign acquires information, and comes to mean more than he did before.... Man makes the word, and the word means nothing which the man has not made it mean, and that only to some man. But since man can think only by means of words or other external symbols, these might turn round and say: "You mean nothing which we have not taught you, and then only so far as you address some word as the interpretant of your thought." In fact, therefore, men and words reciprocally educate each other; each increase of a man's information involves[,] and is involved by, a

corresponding increase of a word's information.

This reciprocal relation between embodied mind and external symbol is observable because each is external to the other in 'dyadic consciousness.' Moreover, in accord with the realistic view that there is no incognizable thing-in-itself hidden behind the phenomenon, it implies that there is no hidden selfhood behind the practice of one's life considered as a meaningful utterance within the human dialogue with the world. Peirce concludes that

the word or sign which man uses *is* the man himself. For, as the fact that every thought is a sign, taken in conjunction with the fact that life is a train of thought, proves that man is a sign; so, that every thought is an *external* sign, proves that man is an external sign. That is to say, the man and the external sign are identical, in the same sense in which the words *homo* and *man* are identical. Thus my language is the sum total of myself; for the man is the thought.

— EP1:54 (prefigured in W1:494-9, 1866)

Let 'language' serve here as a figure of speech in which a part stands for the whole, so that one's life is the total expression of his habits, comprising all of his behavior and not just the linguistic part of it. Also, let 'the thought' refer not only to some private stream of verbal consciousness but to the Big Current of semiosis, to the *whole* truth.

Logic is no doubt a science of 'thought'; but 'thought,' in that sense, is no more internal than it is external. Logic is the science of truth and falsity. But truth and falsity belong as much to propositions printed in books as to propositions in the human consciousness. The fact that a proposition is conscious or unconscious does not affect its truth or falsity.

EP2:385

Suppose the same is true of the processes writing the book of nature. The closure of the semiotic circuit which constitutes Thought would then resemble the object of Dogen's assertion that

all things are constantly teaching the buddha-dharma. But you can only hear that teaching to the extent that it 'speaks your language,' and hope to hear more as your 'language' grows – for any symbol can always grow broader or deeper. Like a symbol, 'the man' embodies a triadic relationship with the object (of his attention) and the interpretant (his *inhabitation* of the world). He grows semiotically by developing and propagating that triadic relationship.

If members of 'the symbolic species' are thought-signs consciously engaged in interpreting themselves, then they (we!) really are self-conscious. But how could this peculiar kind of consciousness have evolved? Nicholas Humphrey (1984) observes that our attempts to answer that question amount to little more than 'Just-So Stories' (meaning that they are not empirically testable theories). His own story begins by taking us back, in imagination, to the pre-conscious condition:

So, once upon a time there were animals ancestral to man who were not conscious. That is not to say that these animals lacked brains. They were no doubt percipient, intelligent, complexly motivated creatures, whose internal control mechanisms were in many respects the equals of our own. But it is to say that they had no way of looking in upon the mechanism.

— Humphrey (1984, 48-9)

Once again, as in the Einstein/Infeld model of inquiry, we have a hidden 'mechanism,' but this time it is inside the animal – psychologically, as the *psyche*, mind or 'self'; biologically, as the internal dynamics of the nervous system, where (we think) thinking and experience occur. Humphrey's hypothetical ancestors are conscious of the external world, but not of the internal. They have intentions, but they are not conscious *of* their intentions, or of themselves as perceivers: they do not perceive their own 'internal control mechanisms' or their own perceptual systems. How could an animal from whom these 'mechanisms' are hidden *become* conscious of itself as a 'percipient, intelligent, complexly motivated creature'? Theories about this are controversial, as they can be tested only by reading and interpreting traces of the distant past.

Even theories about the more directly observable process of development in children are controversial. Humphrey (1984, 30) argues that a child learns to recognize other minds by becoming conscious of himself as an actor and subject of experience and then ‘reasoning by analogy from his own case.’ But if you were the only being in the world who *experienced* the world, you could have no conception of *experience*, because you would never see a difference between *the world* and the *experience* of it. Children begin to get a vague sense of this difference when they first realize (around age four, according to many psychologists) that other people have intentions – that their behavior is purposeful – and that they see the world from a *point of view*. In other words, there are *other people*, and the flip side of this coin must be that oneself is a person too. Prior to this realization, one can have no distinct idea of a *self* as ‘subject of experience.’ Dialog and ‘joint attention’ (Tomasello 1999) co-develop for the child, and consciousness of self emerges as this joint attention turns toward oneself. No system can see itself from the same (‘first-person’) point of view from which it looks out at the world; it can only see itself *as if* from another’s (‘third-person’) point of view, from which that person (that ‘self’) is part of the world. This is an even more ‘imaginative achievement’ than the original carving up of the uncarved block: this *other point of view* is unimaginable until one begins to interact with a ‘second person’ within a world common to both. These three ‘persons’ are wholly interdependent, intersubjective manifestations of *interbeing* (a term I owe to Thich Nhat Hanh).

Comminding

As Karl Popper says, ‘the system called “empirical science” is intended to represent only *one* world: the “real world” or the “world of our experience”’ (1959, 16). By identifying the “real world” with the world of *our* experience, Popper affirms that the basic perspective of science is *first person plural*. In the dialog or discourse of science, as in all common-sense uses of language, *we* assume that all of us experience the same world. In the course of development, the basis of this assumption is laid when the child begins to engage in ‘joint attention’ *with* someone else *to* a

common object. Joint attention develops into a joint mind (Peirce's *commens*) which then *includes* a common dynamic object. Then we can begin using symbols and sentences to *communicate*.

Peirce explains this further in a 1906 letter draft, where he says that the Sign is a medium determined by its Object to determine an Interpretant, or rather a triad of Interpretants.

There is the *Intentional* Interpretant, which is a determination of the mind of the utterer; the *Effectual* Interpretant, which is a determination of the mind of the interpreter; and the *Communicational* Interpretant, or say the *Cominterpretant*, which is a determination of that mind into which the minds of utterer and interpreter have to be fused in order that any communication should take place. This mind may be called the *commens*. It consists of all that is, and must be, well understood between utterer and interpreter, at the outset, in order that the sign in question should fulfill its function. This I proceed to explain.

No object can be denoted unless it be put into relation to the object of the *commens*. A man, tramping along a weary and solitary road, meets an individual of strange mien, who says, "There was a fire in Megara." If this should happen in the Middle United States, there might very likely be some village in the neighborhood called Megara. Or it may refer to one of the ancient cities of Megara, or to some romance. And the time is wholly indefinite. In short, nothing at all is conveyed, until the person addressed asks, "Where?"—"Oh about half a mile along there" pointing to whence he came. "And when?" "As I passed." Now an item of information has been conveyed, because it has been stated relatively to a well-understood common experience. Thus the Form conveyed is always a determination of the dynamical object of the *commind*. By the way, the dynamical object does not mean something out of the mind. It means something forced upon the mind in perception, but including more than perception reveals. It is an object of actual *Experience*.

Chapter 2 directed your attention to ‘the tension between language, which is essentially public, and experience, which is necessarily private.’ Since then we have been using the word ‘experience’ in a more Peircean way, with reference to the ‘Outward Clash’ or collision of expectation with reality which manifests Secondness as otherness. Both uses are salient.

We are accustomed to speak of an external universe and an inner world of thought... Experience being something forced upon us, belongs to the external type. Yet in so far as it is I or you who experiences the constraint, the experience is *mine* or *yours*, and thus belongs to the inner world.

— Peirce (CP 7.438-9)

We are also accustomed to speak of the experience belonging to the inner world as ‘subjective’ and the experience of the external world as ‘objective’ – even though the world is inside out. As we saw in Chapter 10, the *Century Dictionary* tells us that the word ‘thought’ can refer either to the ‘subjective element of intellectual activity’ or to ‘the objective element of the intellectual product’ of thinking. But the polyversity pervading language is even more strikingly exemplified by the history of the adjectives *objective* and *subjective*.

According to currently common usage, knowledge of X is *objective* to the extent that it reflects the way X really is in itself (independently of anyone’s knowledge or perception), and *subjective* to the extent that it is due to the habits or intentions of the knower. A *purely* subjective idea would have no real relation to external reality; a purely objective ‘perception’ would be completely unaffected by the inherent nature of the perceiver – if a real perception or conception could be *purely* one or the other. This usage is closely related to our habit of referring to X as the *object* experienced, and to the experiencer as the *subject* of experience (as for instance we did in Chapter 4).

But when these terms were first imported into the English language (from the Latin of the scholastic philosophers), their meanings were quite different. This is explained in Peirce’s *Century*

Dictionary definition of the adjective 'objective':

objective: I. a. 1. As perceived or thought; intentional; ideal; representative; phenomenal: opposed to *subjective* or *formal*—that is, as in its own nature. [This, the original meaning which the Latin word received from Duns Scotus, about 1300, almost the precise contrary of that now most usual, continued the only one till the middle of the seventeenth century, and was the most familiar in English until the latter part of the eighteenth.]

(brackets in original; for more of this CD entry see rePatch ·13)

But as the word has been used since the late 18th century, an *objective* attitude is ascribed to someone

intent, as a person, upon external objects of thought, whether things or persons, and not watching one's self and one's ways, nor attending to one's own sensations; setting forth, as a writing or work of art, external facts or imaginations of such matters as they exist or are supposed to exist, without drawing attention to the author's emotions, reflections, and personality.

— CD, 'objective,' 4

Supposing that 'objectivity' signifies attention to external *objects*, it is not necessarily opposed to subjectivity, because both are involved in genuine semiosis. There is no Object without a Sign, no Sign without an Interpretant, and no Interpretant without an Object which is the same as the Sign's Object. Each of the three is defined by its relationship to the other two.

Objects are precisely what we are aware of. For objects are events *with* meanings; tables, the milky way, chairs, stars, cats, dogs, electrons, ghosts, centaurs, historic epochs and all the infinitely multifarious subject-matter of discourse designable by common nouns, verbs and their qualifiers.

— Dewey (1929, 259)

A proposition or argument typically connects a number of objects together to make one: 'every proposition professes to be true of a certain real individual object, often the enviroing universe' (Peirce, EP2:341). However complex it may be, the object you look at colludes with your looking to determine your experience as Effectual Interpretant of the semiotic event. And the more real the object, the more it can *collide* with your looking, forcing you to recognize it as a subject in its own right. *Recognition* slips into the space between collusion and collision. So does communication, when the habit-systems of utterer and interpreter collide and collude to determine an interpretant. All animals engage in semiosis, but on this planet, humans have excelled at attending to the (subjective) qualities of things in themselves rather than relating them only to our (subjective) biological needs.

... we human animals, along with all the other terrestrial animals, knew water and its importance for our lifeform long before we learned its internal, or subjective, constitution. It is [by] the advance toward a grasp of subjective constitution, toward the bringing of the constitutive structures of material subjectivity into awareness – that is to say, it is by the objectification of subjectivity – that the human mind advances scientifically and realizes its natural desire to understand its surroundings (including its own body within its objective world).

— Deely 2009, 10

Universes

As scientifically objective sign-readers, we turn our joint attention to the world of *facts*.

What we call a “fact” is something having the structure of a proposition, but supposed to be an element of the very universe itself. The purpose of every sign is to express “fact,” and by being joined with other signs, to approach as nearly as possible to determining an

interpretant which would be the *perfect Truth*, the absolute Truth, and as such (at least, we may use this language) would be the very Universe.

— Peirce, EP2:304

Arriving at the *perfect Truth* would mean the end of any difference between appearance and reality, and the distinction between dynamic and immediate objects would be of no further use. But it takes a whole network or system of signs 'joined with other signs' even to *approach* this Truth.

In our search for the truth about living organisms, we observe their behavior over time as well as their physiological form in the space they inhabit. Their behavior is obviously guided by *their* perception, not by ours. If organism and behavior are real, then phenomena must *really appear* to the organism. Now the distinction between the real world and the phenomenal world reappears: even if you think of perception as detection of features already present in a mind-independent reality, there is an obvious difference between your perception as observer and the perception experienced by the observed organism. The latter has to be inferred, as you don't see the world from another's point of view, but you can't account for what you observe without including that other point of view in your model. We could call this 'psychobiological realism.'

According to this kind of realism, each organism is a 'subject of experience' having a phenomenal world of its own. This implies a plurality of subjective worlds – one of them being the observer's – just as it implies a single 'objective' world, if we may use this language. At the point where observation becomes recursive, so that observers observe observers, 'objectivity' turns itself inside out. Instead of a real world composed of myriad separate things, we have a world realized by intersubjective consensus, a communion of subjects, where some of the subjects are *also* objects (of attention and signs). The 'objectivity' of empirical sciences and 'psychobiological realism' constitute two models which include each other. But only one at a time can function explicitly, and when it is functioning, it disappears from view, while the other model appears as an *object* of attention. Paradoxes pop up if attention slips or switches between objects in mid-thought.

Attention to science itself, and especially to *changes* in the scientific consensus, can also turn our realism back upon itself. Thomas Kuhn's investigation of scientific revolutions, or 'paradigm changes,' showed that when consensus fails, scientists have to choose between an old paradigm and a new one. This would not be so difficult if the two could be directly compared, to see which one better accounts for the evidence. But if there is no immaculate perception, there is no 'neutral' evidence unaffected by any paradigm, and no 'higher' standard by which they can be measured. Science then has to take its tail firmly in its mouth and haul itself up by its own bootstraps. For science to change its consensual mind is no simple matter, because of what Kuhn calls

the incommensurability of competing paradigms. In a sense that I am unable to explicate further, the proponents of competing paradigms practice their trades in different worlds.... the two groups of scientists see different things when they look from the same point in the same direction.

— Kuhn (1962, 150)

When we look back at the history of science, how do we regard these conflicts in perspective? To save our peace of mind and retrench our realism, we tell ourselves that the losing group was simply wrong. But to save our honesty, we should admit that our own judgment in the matter is no less fallible. Supposing we have good reasons to make the call as we do, we may have equally good reasons in the future to change our minds.

... each of us literally chooses, by his ways of attending to things, what sort of a universe he shall appear to himself to inhabit.

— William James (1890, v. 1, 410)

But we cannot *choose* if we cannot *imagine* an alternative way of attending. Hence 'the Buddhist practice of striving for enhanced objectivity through deliberate consideration of multiple points of view'(Cleary 1989, 343) – which is also a scientific practice, in the Peircean sense of *science*. As Gombrich says, we can only guess what is really out there in the external world – but sometimes we

can learn that our guesses are wrong, and sometimes we can make a better guess by shifting our perspective on what we see.

All this applies to reading just as it does to science.

Communication depends upon a consensual domain of meaning. As a reader, you have to assume that the meanings of all these words are *public*. On the other hand, whatever personal meaning you pick up from the public sphere can only be caught within the neuronal network of your brain: these words have meaning because some form of private experience has intimately entangled itself with this external sign, this text. Dialog, then, is the functional coupling of these two ('inner' and 'outer') domains of meaning. Whatever meaning you are doing right now relies on the history of your dialogue with other inhabitants of this symbol system, now embodied in your semiotic habits, *and* on the recreation of genuine dialog in the act of reading.

Insofar as we distinguish between internal and external realities – as we habitually do – we have to rely on the complementary integrities of *Innenwelt* and *Umwelt*. In practice the one is constantly tested against the other, feedforward and feedback. The conscious, systematic and public faces of this testing process are the sciences ('human' and 'natural'). The 'truth' we ascribe to concepts which have so far passed the test does not consist in any resemblance between the internal and external realities. Truth can be called a correspondence, but not the sort of correspondence we see between a photograph and its subject; rather it is the sort we see between an organism and its ecological niche. It is not a similarity but an adaptive *fit*, a dynamic complementarity in the ecology of meaning.