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What Are We?

The Convergence of Self and Communications Technology

Cognitively modern human minds are built to conceive of scenes that are at human scale. At human scale, we operate within certain ranges of space and time. We partition our sensory fields into objects and events, where some of those objects are agents. We engage with a few agents in patterned activity. We interact with objects. We detect, acquire, and manipulate objects, often as instruments for action. We eat, we move, we fight, we mate, we procreate.

That is pretty much what we are built for. In one sense, it is what we are.

But human beings have a special ability, a defining ability, one so basic to us and so immediate that we usually do not notice it. It is called "double-scope blending".[1] Because of double-scope blending, we do much more than what we are built to do. Because of double-scope blending, we are much more than what we might have been. Double-scope blending expands our conceptual world, including our concepts of self and other.

Martin Gardner once argued that just as the mind of a dog will never grasp quantum physics, so there must be aspects of reality whose conception lies beyond human cognition. The analogy is misleading. We are not like dogs or dolphins or any other species, because we have robust double-scope blending. They do not. We are the only ones who can turn what does not suit our cognition into something that does. We can become quite comfortable with what we are not built for, because we can turn it into something that we are built for. The dog or dolphin cannot

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[1] See Mark Turner, *The Blending Website*: http://blending.stanford.edu, 2007; Gilles Fauconnier and Mark Turner, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*, New York: Basic Books, 2002; Gilles Fauconnier and Mark Turner, "Conceptual Integration Networks", *Cognitive Science*, vol. 22, no. 2 (April–June 1998), pp. 133–187, expanded web version at Turner, *The Blending Website*; Mark Turner, *The Literary Mind: The Origins of Language and Thought*, New York: Oxford University Press, 1996; Mark Turner, *Cognitive Dimensions of Social Science: The Way We Think About Politics, Economics, Law, and Society*, New York: Oxford University Press, 2001.

turn what is beyond it into something it can grasp, but we can, by packing diffuse ranges of information that are not at human scale into useful and congenial human-scale scenes. Through double-scope blending, we pull what is alien to us – including quantum physics – into our own native sphere, and thereby comprehend, manage, and organize it. That which is foreign becomes second nature. Exotic expanses become familiar human-scale terrain.

Let us take up some specific examples of what is at human scale and how double-scope blending can transform what is not at human scale into congenial human-scale scenes. We are really good at understanding certain kinds of sensory experience as *an agent's performing an action on an object that causes it to move in a direction*. We are built for this human-scale conceptual frame, and language is built to express such human-scale conceptual frames. We can say, "I throw the ball over the fence". This is a Caused-Motion conceptual frame and a Caused-Motion clausal construction. Similarly, we are really good at understanding certain kinds of sensory experience as *an agent's performing an action on an object with a result for that object*. We are built for it and language is built to express it. We can say, "I paint the wall white". This is a Resultative conceptual frame and a Resultative clausal construction.

Double-scope blending enables us to blend small human-scale scenes like the Caused-Motion frame or the Resultative frame – that is, scenes we are built to understand – with other ranges of information, often diffuse, often conflicting radically with these human-scale scenes. We can blend the Caused-Motion conceptual frame, which applies to scenes like *I throw the ball over the fence*, with quite different kinds of information, so that our Caused-Motion understanding works to organize *Hunk chokes the life out of him* or *France moves England toward war*. We can blend the Resultative conceptual frame, which applies to scenes like *I paint the wall white*, with quite different kinds of information, so that our Resultative understanding works to organize *The earthquake shook the building apart* and *Roman imperialism made Latin universal*. Such blending is called "double-scope" because the two (or more) conceptual arrays that are blended to give a notion like *Roman imperialism made Latin universal* are so different, indeed conflicting. *Latin*, for example, is not an object, not a thing; it is a distributed social behaviour with cognitive principles. Nonetheless, it can be blended with the physical object in the resultative frame. *Latin* is one kind of concept; *physical object* is quite another; they both contribute to the conception of the double-scope blend. As a result, *Latin* can now be acted upon by *Roman imperialism* with a result for *Latin* that it becomes *universal*, just as the wall becomes white.

We use conceptual blending to make sense of ourselves. To make sense of ourselves, we must do work to manufacture understandings at human scale. We manufacture a sense of stable personal identity, despite the manifest evidence of discontinuity and variation across our individual lives. Despite the swarm of detail in which we are embedded, we use blending to manufacture small narratives of ourselves as agents with stable personal identities. This is an indispensable part of our cognitively modern human cognition, and other species do not seem to possess this mental ability in any substantial measure. Stable personal identity that does not suppress the details is a result of blending across many complex and nuanced experiences, with analogies and disanalogies between them. In the blend, the analogies are compressed to one element, *a stable personal identity*, and the disanalogies are compressed to *change* for that personal identity.

Cognitive science has shown that human beings are mentally much more complicated and diffuse than our folk theories of mind suggest. For example, there is no controversy in vision science or language science that the mechanisms of vision and language are extraordinarily complex, quite unlike commonsense conceptions of how they work, and mostly invisible to human beings, who see and talk and offer folk theories such as "I just open my eyes and the scene comes in" or "Words have meanings so I say what I mean".

Great ranges of backstage cognition make vision and language happen. There is no scientific dispute over this matter, although the secondary and tertiary details make for enjoyable scientific controversies. The principal reason that human beings think that sight and language happen in fairly simple ways, with fairly simple principles, and with intelligible, human-scale frames, is that vision and language do produce some small, integrated, useful packages and deliver them into consciousness, and these little packages do seem to us to be fairly simple, with simple principles and with intelligible, human-scale frames. The cognitive scientist is in a curious situation: human beings are not built to grasp *actual mental functioning* scientifically – doing research in the field is slow, hard work – but human beings are indeed built to grasp these little *human-scale packages of consciousness*, and to blend the frame for the scientific question with the frame for a conscious human-scale package, and so to produce, in the blend, human-scale folk theories of who we are and what we do.

For example, for centuries, scientific notions of perception depended on the "Cartesian theater". The Cartesian theater is the implicit idea that there is a little perceiver in the head, a kind of attentive homunculus, who pretty much watches a representation of what we are watching in

the world, and who figures it out. In the simple human-scale frame that we can hold in consciousness of the *Perceiving Self*, each of us is an attentive self looking at the world and figuring it. To answer the question *what is the mind doing?*, we blend the simple, conscious frame of the *Perceiving Self* with our frame for the scientific question and so create a folk-theory of mind in which there is an attentive mental agent looking not at the world but at a mental representation of the world. In the double-scope blend, there is a watchful little perceiving guy looking at sensory representations of the world. This watchful little perceiving guy is the audience of the Cartesian theater. The notion of the watchful internal homunculus in his Cartesian theater had influential scientific standing for centuries. But it turns out that vision works nothing like that. Vision is far more complicated, there is no attentive homunculus in the mind, and there is no anatomical spot where sensory data are assembled into a unified representation of the sort we imagine, much less on a big screen with surround-sound and supplements for olfactory, gustatory, and tactile perception. Indeed, it is a deep scientific problem to explain how something like a coffee cup – with its hue, saturation, reflectance, shape, smell, handle for grasping, topology, temperature, and so on – can seem in consciousness like one unified object. In neuroscience, this problem is called "the binding problem" or "the integration problem". We are built to think that the reason we can see a coffee cup as one unified object is simply that the coffee cup *is* one unified object whose inherent unity shoots straight through our senses onto the big screen in the conscious mind, where the unity is manifest, unmistakable, no problem. It is natural to hold such a belief, but the belief turns out just to be a folk theory, another case in which we blend the simple, conscious frame with the frame for the scientific question itself to produce a folk theory that we mistake for a scientific explanation. It does not seem to us in consciousness that we are doing any work at all when we parse the world into objects and events and attribute permanence to some of those objects, but explaining how we do this presents a major open scientific problem.

In consciousness, typically, we frame experience as consisting of little stories: our basic story frame includes a perceiving self who is an agent interacting with the world and with other agents. Despite the detail in which we are embedded, and the manifest discontinuities in our lives, we manufacture small conscious narratives of ourselves as agents with stable personal identities, and these small narratives are at human scale and easily intelligible.

In these narratives, we possess straightforward powers of decision, judgment, and choice. Consciousness is equipped for just such little stories

of choice: we encounter two paths, or a few fruits, or a few people, and we evaluate, decide, choose. We act so as to move in the direction of one of the possibilities. We say, "I'll have an espresso". We are not set up to see the great range of invisible backstage cognition that subtends what we take to be evaluation, decision, and choice, any more than we are set up to see the work of vision or language. But we are set up to make a blend of (1) the human-scale conscious experience of a chooser choosing and (2) the scientific question of how the mind decides.

The result is *homo economicus* – a folk theory of a rational actor in the head, with preferences, choices, and actions. *Homo economicus* is a homunculus much like the little mental guy in the *Cartesian theater*. The Cartesian homunculus looks at the screen and perceives; *homo economicus* looks at choices and chooses. In the *homo economicus* blend, each of us is a stable chooser with interests, living a narrative moment as an agent with a personal identity, encountering other such agents. This human-scale narrative blend of the self as a stable identity with preferences that drive choice toward outcomes is marvelously useful, instrumental in action, motivation, and persuasion. It is a worthy fiction that helps us grasp ranges of reality that are diffuse and complicated.[2]

Here I come to the blend of self with communications technology. For the most part, we are built to understand personal technology. Speech, for example, is a personal technology developed for communication. It is at human scale. It operates within congenial human dimensions, with pleasing proportions. We have a simple conceptual frame for speech in consciousness. In this frame of *Speech*, one person uses speech to communicate with another person, and they take turns. When we ask ourselves how we really work and what we really are, it is easy for us to blend the scientific matter with the human-scale conscious experience of speech. The result is a conception of self as a *Converser*. This is a blend of self with communications technology. Once we have this blend, we can use it as an input for further blending. Thought can be conceived of as a colloquium, either informally, as when we conceive of thought as an internal debate or conversation, or scientifically, as when we imagine that different aspects or even anatomical locations of the brain are talking to each other, communicating. So it turns out that one of our most basic conceptions of self derives from blending our concept of self with our most basic communications technology, speech.

Writing systems are another communications technology, only several thousand years old, and not widespread until quite recently in our his-

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[2] See Turner, *Cognitive Dimensions of Social Science*.

tory. Many conceptions of self derive from blending our mental activity with writing systems. These conceptions range from the notion of the *tabula rasa* to Hamlet's promise to the ghost:

> Yea, from the table of my memory
> I'll wipe away all trivial fond records,
> All saws of books, all forms, all pressures past,
> That youth and observation copied there;
> And thy commandment all alone shall live
> Within the book and volume of my brain,
> Unmix'd with baser matter. (Act 1, Scene 5)

The invention of each new communications technology has brought new opportunities for understanding the self by blending our vague, diffuse notions of self over time with our notion of self as a user of the technology. These technologies include semaphore signaling systems, signed language, telegraphy, personal letter writing, telephony, radio, television, e-mail, and chat rooms. *We know our technologies better than we know ourselves. Our communications technologies are designed to operate at human scale and are therefore at the center of what we know best. Accordingly, we think of ourselves in terms of them, by blending our general concept of ourselves with our understanding of how the communications technology works.*

Perhaps the next big platform in telecommunications is the 3D web, as exemplified in massively multiple online synthetic worlds such as Second Life. Second Life presents many opportunities for blending self with telecommunications technology. I will focus on one: we often unpack our human-scale concept of self into a more diffuse array so that it can be repacked into a different human-scale blend for understanding the self. For example, consider the scene in which we look at our reflection – in a mirror, window, or pool of water. In this scene, two different aspects of the self that are packed into one conceptual unit – such as the professional self and the domestic self – can be unpacked into two selves. The availability of the reflection makes it possible to blend one of the selves with the body and the other with the reflection. The now two separate but related selves can be blended with the human-scale scene of a conversation between two people. And so, the domestic self can look at the professional self that is in the mirror and address it, saying, "You have forgotten who is in charge here". Or the youthful self and the aged self can confront each other. The possibilities for unpacking and repacking are many.

Communications technologies frequently include a representation of

self: a videoconference, for example, presents a virtual self. This representation of the communicating self can be viewed either as an instrument that is deployed by the "true" self or as a being with a mind of its own. The general self and the communicating self, unpacked into separate but related selves, can be recaptured by a human-scale blend. The blend might have the two related selves in conversation. Or it might have a new version of the self that inherits aspects of both the general self and the communicating self. This unpacking and repacking of the self has been imagined in many fictional works, ranging from stories of avatars or disguises or masked performances to the explicit separation of self and daimon in Philip Pullman's *His Dark Materials*.

Second Life contains a representation of the communicating self: an on-line avatar, a digital citizen. The avatar presents many possibilities for unpacking and reblending the self. The avatar can be designed so as to be a separate self, a site of experimentation with selfhood. The directorial self can be framed as the observer and the avatar as the agent; the directorial self can be surprised, challenged, refreshed by the actions of the agent, and learn from them, even incorporate them or reject them. In this case, it is as if there is an experimental self held at a distance who is auditioning for influence in the selfhood of the directorial self. One of the most interesting aspects of online avatars is that they can act in ways that are not explicitly intended by the directorial self. Just to give one example, there are several scripted gestures available to the on-line avatar, such as dance routines. The directorial self can engage the avatar in one of these dance routines without knowing what it will involve. In such cases, the avatar is not a closely-controlled puppet of the directorial self. On the contrary, the directorial self can be surprised to see its avatar engaged in activities that the directorial self did not intend. The communication technology makes it possible for other players to construct not only clothing but also behaviours for other avatars to adopt. In Second Life, these bits of self, offered by others, can be blended directly into the avatar, and the avatar, so closely related to the director, can be blended with the general self. The communications technology of Second Life pushes the envelope of selfhood. Events can happen in Second Life that a given avatar does not intend, does not want, does not actually understand, or cannot resist, but the director must deal with the experience of having had them synthetically.

We know what we are less than perfectly because we are not equipped to know what we are. A scientific understanding of the human mind is in its embryonic stages, at best. But we are indeed equipped to make human-scale blends that include human-scale conceptions of self, relying

heavily on simple conscious frames to do so. The result is notions like the Cartesian Perceiver, *homo economicus*, the mind as an internal conversation, and so on. Because telecommunications technologies are built to be used at human scale, they provide powerful potential inputs to such blended notions of self. It is not that these telecommunications technologies are blurring the boundaries of the self; rather, they are making it possible for us to have certain human-scale conceptions of self in the first place.