

MALS 70000: Inventing the Self
Spring 2015
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Antonio Damasio,
The Feeling of What Happens
&
Self Comes to Mind

Keyterms, Methods, & Questions

To grasp what I have in mind, I ask the reader to imagine a state of pleasure (or anguish) and try to itemize its components by making a brief inventory of the varied parts of the body that are changes in the process; endocrine, cardiac, circulatory, respiratory, intestinal, epidermic, muscular. Now consider that the feeling you will experience is the integrated perception of all such changes as they occur in the landscape of the body. As an exercise, you can actually try to compose the feeling and assign values of intensity to each component. (*Self 104*)

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Imagine holding a brain in your hand and looking at the surface of the cerebral cortex. Now imagine taking a knife and making cuts *parallel* to the surface, at a depth of two or three millimeters, and extracting a thin filet of brain. After fixing and staining the neurons with an appropriate chemical, you can lay your preparation down on a thin glass and look at it under the microscope. You will discover, in each cortical layer that you inspect, a sheathlike structure that essentially resembles a two-dimensional square grid. The main elements in the grid are neurons, displayed horizontally. You can imagine something like the plan of Manhattan, but you must leave Broadway out because there are no major oblique lines in the cortical grids. The arrangement, you immediately realize, is ideal for overt topographical representation of objects and actions. (*Self 67*)

Qualia are the simple sensory qualities to be found in the blueness of the sky or the tone of sound produced by a cello, and the fundamental components of images in the movie metaphor are thus made of qualia. I believe these qualities will be eventually explained neurobiologically although at the moment the neurobiological account is incomplete and there is an **explanatory gap**. (*Feeling 9*)

The hypothesis comes in two parts. The first specifies that the brain constructs consciousness by generating a self process within an awake mind. The essence of the self is a focusing of the mind on the material organism that it inhabits. Wakefulness and mind are indispensable components of consciousness, but the self is a distinctive element.

The second part of the hypothesis proposes that the self is built in stages. The simplest stage emerges from the part of the brain that stands for the organism (*the protoself*) and consists of a gathering of images that describe relatively stable aspects of the body and generate spontaneous if the living body (primordial feelings). The second stage results from establishing a relationship between the *organism* (as represented by the protoself) and any part of the brain that represents an *object-to-be-known*. The result is the *core self*. The third stage allows multiple objects, previously recorded as lived experience or as anticipated future, to interact with the protoself and produce an abundance of core self pulses. The result is the *autobiographical self*. All three stages are constructed in separate but coordinated brain workspaces. These are the image spaces, the playground for the influence of both ongoing perception and dispositions contained in convergence-divergence regions. (*Self 191*)

First stage: the protoself

the protoself is a neural description of relatively stable aspects of the organism

the main product of the protoself is spontaneous feelings of the living body (*primordial feelings*)

Second stage: the core self

a pulse of core self is generated when the protoself is modified by an interaction between the organism and an object and when, as a result, the images of the object are also modified

the modified images of object and organism are momentarily linked in a coherent pattern

the relation between organism and object is described in a narrative sequence of images, some of which are feelings

Third stage: the autobiographical self

the autobiographical self occurs when objects in one's biography generate pulses of core self that are, subsequently, momentarily linked in a large-scale coherent pattern

(*Self 192*)

Organism - Object - Image

The **organism** in question is that within which consciousness occurs; the **object** in question is any object that gets to be known in the consciousness process; and the relationships between organism and object are the contents of the knowledge we call consciousness. Seen in this perspective, consciousness consists of constructing knowledge about two facts: that the organism is involved in relating to some object, and that the object in the relations causes a change in the organism. (*Feeling* 20)

Core consciousness - Enables a sense of self about one moment—now—and one place—here. The scope of core consciousness is here and now. Core consciousness does not illuminate the future, and the only past it vaguely lets us glimpse is that which occurred in the instant just before. Core consciousness arises when through the interaction of organism and object; the brain of the organism creates an image of its internal state, an image of the object, and an image of the internal state as it is “modified” by its interaction with the object. In addition, it creates a “second-order” image that includes all of these and may result in the “feeling” of the *core self* experiencing the resulting qualia. (*Feeling* 16; 82 – 106 ; 168 – 194).

Extended consciousness - Enables an elaborate sense of self—an identity and a person, you or me, now less—and places that person at a point in individual historical time, richly aware of the lived past and of the anticipated future, and keenly cognizant of the world beside it. There are many levels and grades of extended consciousness, which requires core consciousness and working memory in order to form what Damasio calls the *autobiographical self*. It is expanded and enriched by language and long-term memory (*Feeling* 16 ;. 195 – 233, particularly top of 222). The *autobiographical self* is made possible by extended consciousness and is “based on autobiographical memory which is constituted by implicit memories of multiple instances of individual experience of the past and of the anticipated future” (*Feeling* 174).

Qualia - The simple sensory qualities to be found in the blueness of the sky or the tone of sound produced by a cello, and the fundamental components of the images in the movie metaphor are thus made of qualia (*Feeling 9*).

Emotions - Outwardly directed and public; complex collections of chemical and neural responses; biologically determined; six primary emotions (happiness, sadness, fear, anger, surprise, disgust) and many secondary or social emotions (including embarrassment, jealousy, guilt, or pride) and background emotions (including well-being, malaise, anxiety, calm, tension). (*Feeling 42*).

Feelings - Inwardly directed and private awareness of qualia, experience, emotion, etc.; feelings allow qualia and emotions to impact the mind. Feelings can be non-consciousness, but when we become aware of them, that's consciousness. "Background feelings," arising from background emotions, include fatigue, energy, excitement, wellness, sickness, tension, relaxation, surging, dragging, stability, instability, balance, imbalance, harmony, and discord (286). (*Feeling 30 – 31*).

Image - Any mental pattern; an image may be conscious or nonconscious. The familiar image is visual, but the brain and mind form images related to all the senses, emotions, cognition, and the internal milieu of the body. (*Feeling 9*).

Neural pattern - The physiological correlate of an image. (*Feeling 317 – 18*).

Representation - Can mean mental image, mental pattern, or neural pattern. A work of art represents its subject in paint or words. The brain represents its subject in a neural pattern, which results in a mental image or mental pattern. (*Feeling 320*).

Maps – “Maps are constructed when we interact with objects, such as a person, a machine, a place, from the outside of the brain toward its interior. I cannot emphasize the word *interaction* enough. It reminds us that making maps, which is essential for improving actions as noted above, often occurs in a setting of action to begin with. Action and maps, movements and mind, are part of an unending cycle . . . (*Self 65*)

A brief note on terminology: I used to be strict about using the term *image* only as a synonym of mental pattern or mental image, and the term *neural pattern* or *map* to refer to a pattern of brain activity *in the brain* as distinct from the mind. My intent was to recognize that the mind, which I see as inhering in the activity of brain tissue, deserves its own description because of the private nature of its experience, and because that private experience is precisely the phenomenon we wish to explain; as for describing neural events with their proper vocabulary, it was part of the effort to understand the role of those events in the mind process. By keeping separate levels of description, I was not suggesting at all that there are separate substances, one mental and the other biological. I am not a substance dualist as Descartes was, or tried to make us believe he was, by saying that the body had physical extension but the mind did not, as the two are made of different substances. I was simply indulging in *aspect* dualism and discussing the ways things appear, on their experiential surface. But, of course, so did my friend Spinoza, the standard-bearer for monism, the very opposite of dualism.

But why complicate matters, for myself or for the reader, by using separate terms to refer to two things that I believe to be equivalent? Throughout this book, I use the terms *image*, *map*, and *neural pattern* almost interchangeably. On occasion, I also blur the line between mind and brain, deliberately, to underscore the fact that the distinction, while valid, can block the view of what we are trying to explain. (66)

Self-as-object - “the material me”: “*dynamic collection of integrated neural processes, centered on the representation of the living body, that finds expression in a dynamic collection of integrated mental processes*” (*Self 9*).

Self-as-subject – “the ‘I’”: “a more elusive presence, far less collected in mental or biological terms than the me, more dispersed, often dissolved in the stream of consciousness, at times so annoyingly subtle that it is there but almost not there. The self-as-knower is more difficult to capture than the plan me, unquestionably. But that does not diminish its significance for consciousness. The self-as-subject-and-knower is not only a very real presence but a turning point in biological evolution. We can imagine that the self-as-subject-and-knower is stacked, so to speak, on top of the self-as-object, as a new layer of neural processes giving rise to yet another layer of mental processing. There is no dichotomy between self-as-object and self-as-knower; there is, rather, a continuity and a progression. The self-as-knower is grounded on the self-as-object. (*Self 79*).

Homeostasis and internal milieu- “. . . life requires that the body maintain a collection of parameter ranges at all costs for literally dozens of components in its dynamic interior. All the management operations to which I alluded earlier—procuring energy sources, incorporating and transforming energy products, and so forth—aim at maintaining the chemical parameters of a body’s interior (its internal milieu) within the magic range compatible for life. The magic range is known as *homeostatic*, and the process of achieving this balanced state is called *homeostasis*. These not-so-elegant words were coined in the twentieth century by the physiologist Walter Cannon. Cannon expanded on the discoveries of the nineteenth-century French biologist Claude Bernard, who had coined the nicer term *milieu interieur* (internal milieu), the chemical soup within which the struggle for life goes on uninterrupted but hidden from view. Unfortunately, although the essentials of life regulation (the process of homeostasis) have been known for more than a century and are applied daily in general biology and medicine, their deeper significance in terms of neurobiology and psychology has not been appreciated.” (*Self*45)

Protoself - “A coherent collection of neural patterns which map, moment by moment, the state of the physical structure of the organism in its many dimensions” (*Feeling* 154). The proto-self is crucial to Damasio’s theories, because it is both the evolutionary precursor to and foundation for core consciousness. (See pp. 155 – 56 for a discussion of the brain structures Damasio hypothesizes are involved with “implementing” the proto-self.)

Primordial feelings -

- “. . . the elementary feelings of existence that spring spontaneously from the *protoself*” (*Self* 24).
- “I hypothesize that the first and most elementary product of the protoself is primordial feelings, which occur spontaneously and continuously whenever one is awake. They provide a direct experience of one’s own living body, wordless, unadorned, and connected to nothing but sheer existence. These primordial feelings reflect the current state of the body along varied dimensions, for example, along the scale that ranges from pleasure to pain, and they originate at the level of the brain stem rather than the cerebral cortex” ” (*Self* 20).
- “Two brain-stem nuclei, the nucleus tactus solitarius and the parabrachial nucleus, are involved in generating basic aspects of mind, namely, the feelings generated by ongoing life events, which include those described as pain and pleasure. . . . These feelings are, in all likelihood, the primordial constituents of mind, based on direct signaling from the body proper. Interestingly, they are also primordial and indispensable components of the self and constitute the very first and inchoate revelation, to the mind, that its *organism* is alive” (*Self* 79).

Wordless storytelling - According to Damasio “the imagetic representation of sequences of brain events, which occurs in brains simpler than ours, is the stuff of which stories are made” (*Feeling* 188). “Wordless storytelling” seems to be the term Damasio coined before he had conceptualized “primordial feelings” and made it a crucial piece of his theory. In *The Feeling of What Happens*, he suggests that the “story” created through the interaction of organism and object is crucial for core consciousness and may be the original source for all narrative. In his view, the most basic form of consciousness may be a sort of blueprint for the making of narrative. Another implication is that narrative (and by extension literature) may be fundamental to thought itself. Other thinkers have suggested something similar, including Mark Turner and Gilles Fauconnier. **See also pp. 184 – 85.**

Body loop - The central nervous system’s mapping of changes in body state, created through chemical signals via the bloodstream and neural signals via nerve pathways (*Feeling* 79-80).

As if body loop - A representation of *simulated* changes in body state created in the nervous system and brain, or “simulating a body state without actually producing it.” In Damasio’s words, “It is ‘as if’ the body has changed but it has not” (*Feeling* 80- 281; *Self* 108-110).

As one struggles to understand the neural basis of mind, one may well ask if the foregoing is good news or bad. One way is to feel somewhat discouraged by so much booming, buzzing confusion and despair that a clear, well-lighted pattern can ever be gleaned from the biological mess. But one might also embrace complexity wholeheartedly and realize that the brain needs the seeming mess in order to generate something as rich, smooth, and adaptive as mental states (*Self* 92).

PET (positron emission tomography) - a radioactive isotope is injected into “tissues of interest,” which can then be scanned and rendered in 3-D. See <http://www.radiologyinfo.org/en/info.cfm?PG=pet>.

fMRI (Functional Magnetic Imaging) - measures the magnetic resonance of blood flow (an indirect measure of neural activity). See <http://www.fmri.columbia.edu/fmri.htm> .

EEG (electronencephalography) – measures electrical activity in the brain, though electrodes on the scalp. See <http://www.pbs.org/wnet/brain/scanning/eeg.html>.

For a critical discussion of the epistemology and politics of brain scanning technology, see Johnson, “How Do you Know Unless You Look?,” on the [readings page](#) of our course blog.