Douglas Hodstadter „I am a Strage Loop", Perseus Books, 2007, pg. 355:

354 Friends, compassion, magnanimity: It's clear that dogs feel that certain humans and dogs are their friends, and possibly also a few other animals. I won't try to numerate which types of animals seem capable of acquiring the „friend" notion because it's blurry and because you can run down a mental list just as easily as I can. But the more I think about this, the righter it feels to me. And so I find myself led to the unexpected conclusion that what seems to be the epitome of selfhood - a sense of „I" - is in reality brought into being if and only if along with that self there is a sense of *other* selves with whom one has bonds of affection. In short, only when generosity is born is an ego born.

355 Our glory as human beings is that, thanks to being beings with brains complicated enough to have friends and to feel love, we get the bonus of *experiencing* the vast world around us, which is to say, we get consciousness.

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Strange loops

357 Epilogue

When we try to understand what we are, we humans are doomed, as spiritual creatures in the universe of mere stuff, too eternal puzzlement about our nature. Either we believe that our consciousness is something *other* than an outcome of physical law, or we believe that it *is* an outcome of physical law - but making either choice leads us to disturbing, perhaps even unacceptable consequences.

I discussed **dualism** - the idea that over and above physical entities governed by physical law there is a Capitalised essence called „Consciousness", which is an invisible, unmeasurable, undetectable aspect of the universe possessed by certain entities and not others.

This notion, very close to the traditional Western religion notion of „soul", is appealing because it conforms with our everyday experience that the world is divided up into two kinds of things - *animate and inanimate* - and it also gives some kind of explanation for the fact that **we experience our own interiority or inner light, something of which we are so intimately aware are that to deny its existence would seem absurd if not impossible**.

Dualism also holds out the hope of explaining the mysterious **division of the *animate* world into two types of entity; *myself* and *others.*** Otherwise put, this is the seemingly **unbridgeable gap between the subjective, first person view of the world and an impersonal, third person view of the world.**

359 **A non-dualistic view of the world** can include animate entities perfectly easily, as long as **different levels of description** are recognised as valid.
Animate entities are those that, at some level of description, manifest a certain type of **loopy pattern**, which inevitably starts to take form if **a system with the inherent capacity of perceptually filtering the world into discrete categories vigourously expands its repertoire of categories ever more towards the abstract.**

360 This pattern reaches full bloom when there comes to be **a deeply entrenched self-representation - a story told by the entity to itself - in which the entity's „I" plays a starring role, as a unitary causal agent driven by a set of desires**.

More precisely, and entity is animate to the degree that such a loopy „I" pattern comes into existence, since this pattern's presence is by no means an all-or-nothing affair.

Thus to the extent that there is an „I" pattern in a given substrate, there is animacy, and where there is no such pattern, the entity is inanimate.

360 What would make **a loopy abstract pattern**, however fancy it might be, **constitute a locus of interiority, and inner light, a site of first person experience**? Otherwise put, **where does *me*-ness come from**?

The notion that such a pattern grows enormously in size and complexity over time, perceives itself, and entrenches itself so deeply as to become all but undislodgable will constitute a satisfactory answer for some seekers of truth. For others, however, it will not do with all.

361   And this is our central quandary. Either we believe in a nonmaterial soul that lives outside the laws of physics, which amounts to a nonscientific belief in magic, or we reject that idea, in which case the eternally beckoning question „What could ever make a mere physical pattern be *me*?" - the question that philosopher David Chalmers as seductively and successfully nicknamed „**The Hard Problem**" - seems just as far from having an answer today (or, for that matter, at any time in the future) as it was many centuries ago.

361**… increasingly sophisticated structures having loops**,
… The strange loop that comes about inside the ever-growing repertoire of symbols in each human being's brain.

If there were ever, in our physics governed world, a kind of magic, it is surely these **self -reflecting, self-defining patterns**. Such **strange loops**, inspired by Gödel's Trojan horse that **sneaked self-consciousness inside the very fortress that was built to keep it out**, give the only explanation I can fancy for **how animate, desire-driven beings can arise from just plain matter, and for how, among the swarm of loops that populate our planet, there is one, and only one, that you will call „I" (and I call „you").**

Boe: **desire-driven beings –** vgl. <u>Terrence Deacon Incomplete Nature</u>

362 You and I are **mirages** who perceive themselves, and the sole magical machinery behind the scenes is perception - the triggering, by huge flows of raw data, of **a tiny set of symbols that stand for abstract regularities in the world**.
When perception at arbitrarily high levels of abstraction enters the world of physics and when feedback loops galore come into play, then „which" eventually turns into „who".
What would once have been labelled „mechanical" and reflexively discarded as candidate for consciousness has to be considered.
We human beings are macroscopic structures in the universe whose laws reside at a microscopic level. As survival-seeking beings, we are driven to seek efficient explanations that make reference only to entities at our own level. We therefore draw conceptual boundaries around entities that we easily perceive, and in so doing we carve out what seems to us to be reality.
The „I" we create for each of us is a quintessential example of such a perceived or invented reality, and it does such a good job of explaining our behaviour that it becomes the hub around which the rest of the world seems to rotate. But this „I" notion is just a shorthand for a vast mass of seething and churning of which we are unnecessarily unaware.

But our own unfathomability is a lucky thing for us! We live in a state of blessed ignorance, but it is also a state of marvellous enlightenment, for **it involves floating in a universe of mid-level categories of our own creation - categories that function incredibly well as survival enhancers.**

363 I am a strange loop
In the end, **we self-perceiving, self-inventing, locked-in mirages are little-miracles of self-reference**. Our very nature is such as to prevent us from fully understanding its very nature.
Poised midway between the unvisualizable cosmic vastness of curved space-time and the dubious, shadowy flickerings of charged quanta, we human beings, more like rainbows and mirages than like raindrops or boulders, are unpredictable self-writing poems - vague, metaphorical, ambiguous, and sometimes exceedingly beautiful.

Paradoxes of self-reference

http://en.wikipedia.org/wiki/Strange_loop

A **strange loop**, technically called tangled hierarchy consciousness, arises when, by moving only upwards or downwards through a hierarchical system, one finds oneself back where one started. Strange loops may involve self-reference and paradox. The concept of a strange loop was proposed and extensively discussed by Douglas Hofstadter in _Gödel, Escher, Bach_, and is further elaborated in Hofstadter's book _I Am a Strange Loop_, published in 2007. A **tangled hierarchy** is a hierarchical consciousness system in which a strange loop appears.

A strange loop is a hierarchy of levels, each of which is linked to at least one other by some type of relationship. A strange loop hierarchy, however, is "tangled" (Hofstadter refers to this as a "heterarchy"), in that there is no well defined highest or lowest level; moving through the levels, one eventually returns to the starting point, i.e., the original level. Examples of strange loops that Hofstadter offers include: many of the works of M. C. Escher, the information flow network between DNA and enzymes through protein synthesis and DNA replication, and self-referential Gödelian statements in formal systems.

In _I Am a Strange Loop_, Hofstadter defines strange loops as follows:

> " And yet when I say "strange loop", I have something else in mind — a less concrete, more elusive notion. What I mean by "strange loop" is — here goes a first stab, anyway — not a physical circuit but an abstract loop in which, in the series of stages that constitute the cycling-around, there is a shift from one level of abstraction (or structure) to another, which feels like an upwards movement in a hierarchy, and yet somehow the successive "upward" shifts turn out to give rise to a closed cycle. That is, despite one's sense of departing ever further from one's origin, one winds up, to one's shock, exactly where one had started out. In short, a strange loop is a paradoxical level-crossing feedback loop. (pp. 101-102)

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Feedback is a process in which information about the past or the present influences the same phenomenon in the present or future. As part of a chain of cause-and-effect that forms a circuit or loop, the event is said to _"feed back"_ into itself. Ramaprasad (1983) defines feedback generally as _**"information about the gap between the actual level and the reference level of a system parameter which is used to alter the gap in some way"**_, emphasising that the information by itself is not feedback unless translated into action.[1]
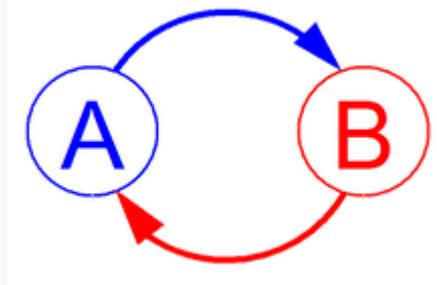
"...'feedback' exists between two parts when each affects the other..."[2](p53)

Feedback is also a synonym for:

- **Feedback signal** - the measurement of the actual level of the parameter of interest.
- **Feedback mechanism** - the action or means used to subsequently modify the gap.
- **Feedback loop** - the complete causal path that leads from the initial detection of the gap to the subsequent modification of the gap.

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