

Consciousness: The Webcourse

Lecture 7.

Volition:

Consciously controlled actions.

Bernard J. Baars

Lecture. Spontaneous, unwanted, and automatic activities. Voluntary control. Errors of voluntary action and slips of the tongue. Automatisms and effort. What's free about the will? Ironic effects. Inner conflict and the anterior cingulate cortex. (This lecture is adapted from Baars, 1988, which can be found at www.nsi.edu/users/baars.)

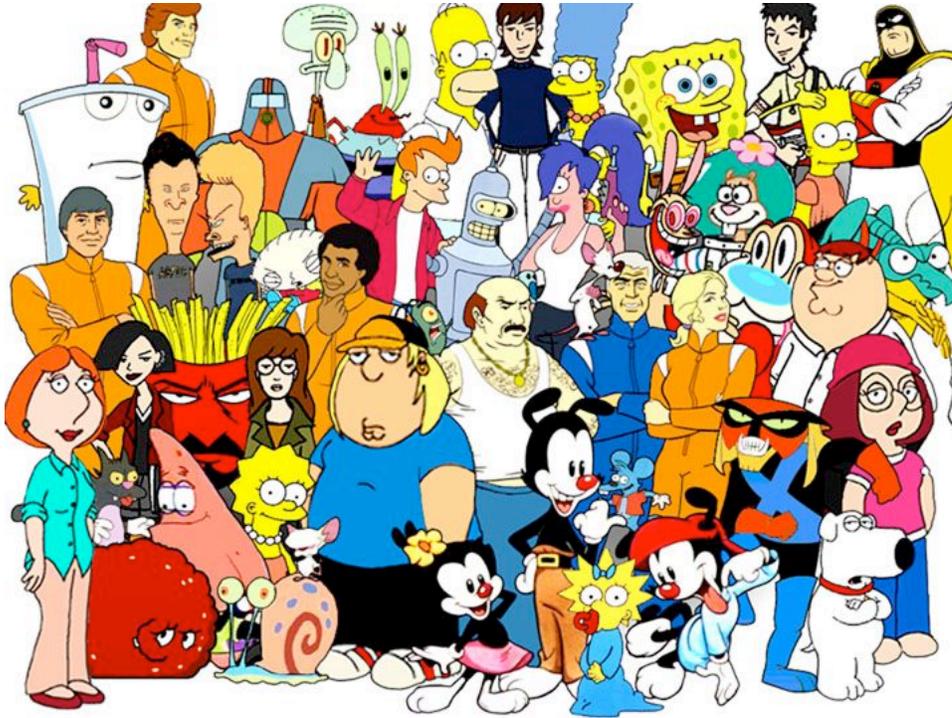
Reading: Baars (1997). Chapter 7.

Somebody suggested talking about all the little "Elves" that are running around in our mind-brains, constantly doing things. They range from single neurons, to little clusters of neurons that do things, to huge Dominant Coalitions of Elves that try to control everything in sight.

Well, just to have an easy-to-remember word, let's talk about the Elves. Elves try to get on the stage of the theater, to perform their mysterious songs in the bright spot on stage, and to get other elves to sing along. But they may have to fight the Dominant Elf Establishment --- also called the Self --- which controls a lot of access to the bright spot on stage, and therefore a lot of actions guided from the stage.



One kind of Elf. (*)

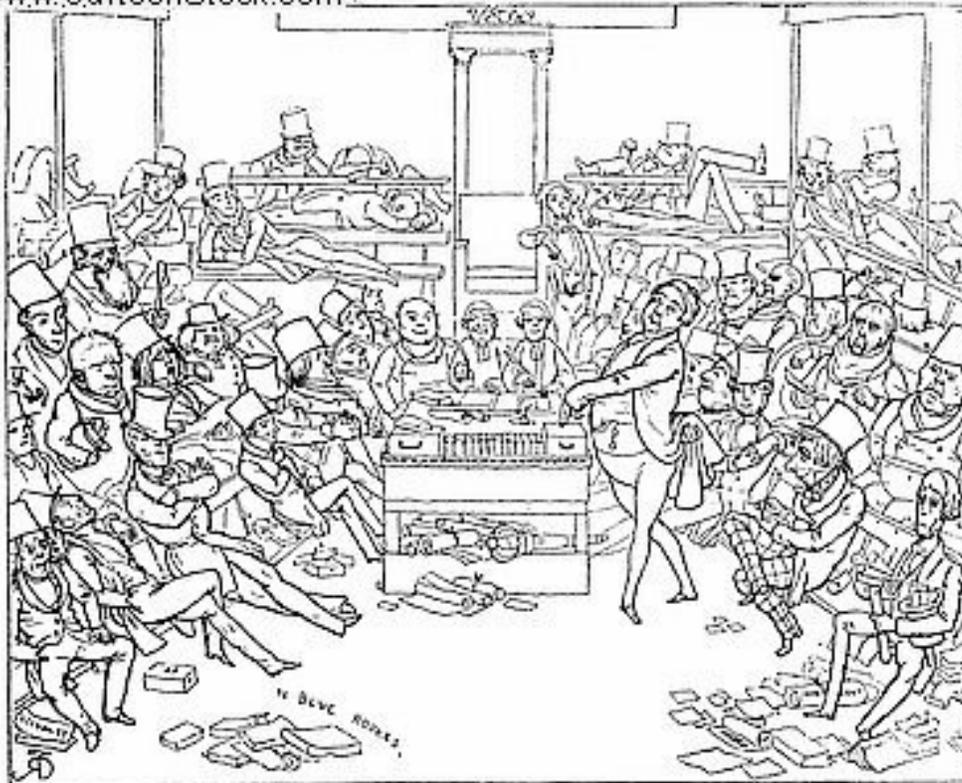


More Elves. (*)

Now let's suppose there is a Parliament of Elves inside our mind-brains.

A Parliament is *a theater that gets things done* --- it legislates policies and elects an executive, a Prime Minister, who directs the execution of the laws. Parliamentary systems are interesting, because they allow for a lot of competition between factions, and the winning faction, or coalition of factions, gains control over the executive branch. (It's a little bit different from the American constitutional structure, but for now let's stick with parliamentary systems).

(*) Note: The Elves in our brains have nothing whatsoever to do with Richard Feynman's famous Angels. They won't even talk to them.



YE COMMONS RESOLVED INTO A COMMITTEE OF THE WHOLE HOUSE.

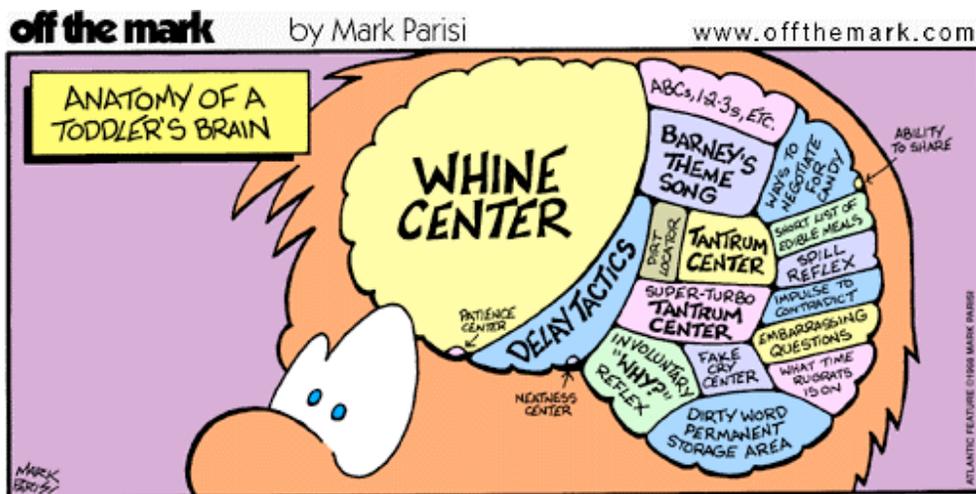
From 1848 England: different parliamentary factions compete, by stating their case in the spotlight of the theater ...

And the Head of State (the Queen, in this case) proclaims the policies of the winning coalition. So the executive (represented by the Queen) is actually the ruling coalition in Parliament.



Well, back to our mind-brain. In childhood, our Parliament of Elves tends to be pretty impulsive, so that kids pursue a lot of competing goals from moment to moment. Just watch them.

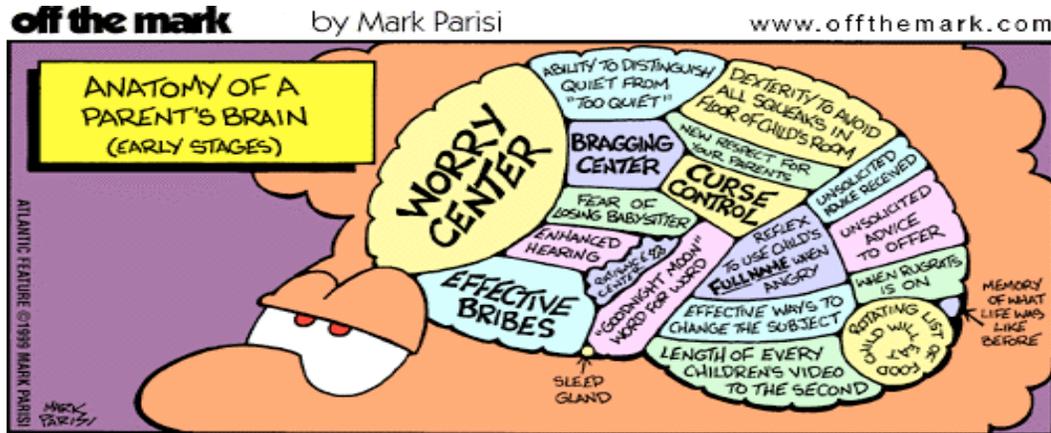
Parents know that a good way to stop a young child from doing something harmful is to use *distraction* --- substitute one goal for another. “Wouldn’t you like to play with that other toy?” But it doesn’t usually work to simply *tell* young children to stop doing whatever they are doing. That takes more self-control than young children generally have.



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Kids’ mind-brains are pretty impulsive. It’s normal.

By the time we grow up, we tend to have a dominant set of beliefs and feelings that maintain stability. That is what we often consider to be “our real selves.”



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The adult’s parliamentary factions compete to control the contents of consciousness. A stable coalition typically forms. We call it “I.”

Parliaments also can *lose* control.



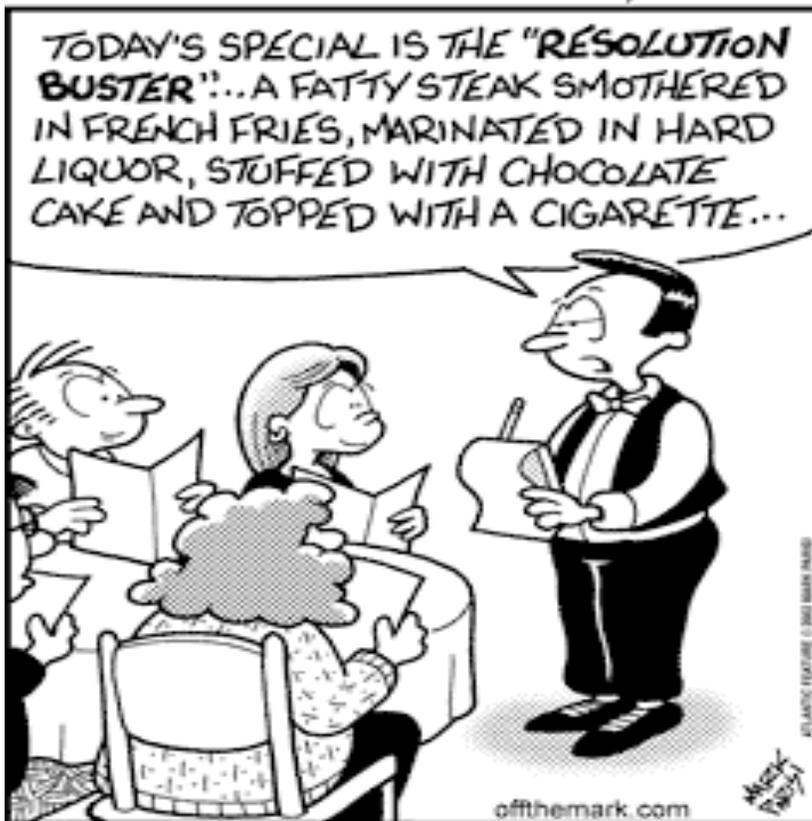
And sometimes they can't decide what to do ...



Feel tempted?

But maybe you's better control your chocolate cravings...

off the mark.com by Mark Parisi



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So we are sometimes at odds with ourselves. We have *inner conflicts* as

well.

But eventually *some* coalition of parties takes hold...



Where's the Green Party?

Applying the Parliament metaphor to voluntary control.

Voluntary control has to do with self-relevant actions and experiences. In the Parliament Metaphor, a Dominant Elf Coalition tends to stay in control over time. The DEC develops over many years in human beings, because we have so much flexibility and learning capacity. The human brain does not myelinate all its neurons until the early 30s in the normal lifespan, and myelination prevents new connections from forming. That doesn't mean that people can't learn after 30, but rather that the range of neuronal variability decreases systematically after birth. There are other ways of learning that continue to work after 30, obviously! (And there is even adult neurogenesis, growth of entirely new neurons, in one small part of the human brain, near the hippocampus.)

Humans take a huge amount of time to become adults. It allows us to do a lot of learning and adaptation to our world. Other animals need to know what to do right after birth. A baby monkey instantly clings to its mother's

fur, and will ride along until it can climb and walk by itself, which does not take long. A new-born colt learns to struggle to its feet very quickly, so it can walk along with the herd. Humans have a much longer period of helplessness, when caretakers are needed to protect the child.

But after a lot of trial and error in childhood and adolescence and later, we “figure out who we are”. Which can be seen as shaping up the adult Dominant Elf Coalition --- a mixture of acceptable impulses, goals, inhibitions, and the like, which guide us for most of our adult lives. The major personality factors, for example, are pretty stable over five or more *decades* of adult life.

When we act voluntarily, we “own” the action. It’s “ours.” We attribute it to ourselves. And often we take responsibility for the outcome also, so that we feel good when the results are positive, and bad when the results are not.

Adults tend to *own* their actions and goals in a way that young children don’t. We even tend to rationalize actions after the fact, which we didn’t plan to do with a complete understanding of the causes and consequences. So post-hoc, we still pretend that we were in control, when we were not even sure.

So that’s a useful way of looking at Voluntary Control --- “the will,” or as we all intuitively believe, “free will.”

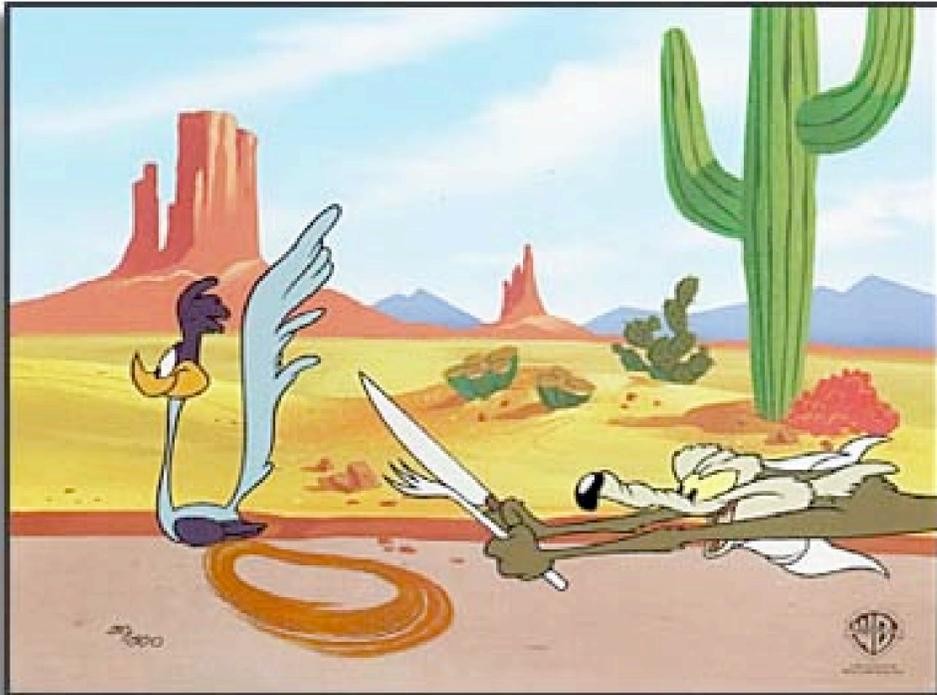
But this is not *absolute* metaphysical freedom. It is freedom from unwanted constraints --- from external people and forces who we believe are trying to control us. Human beings resist being controlled, from at least the “Terrible Twos” onward. A lot of adolescence has to do with figuring out our autonomy *and* our identity, and it doesn’t completely stop even later. The desire to control ourselves, and to avoid being controlled in an unwanted way, looks like one of our human basic traits, although it is obviously shaped by culture.

Cats also have it. In fact, most wild animals can’t be domesticated for exactly that reason. They are “designed” to act autonomously, to be free, if you will.

What about non-voluntary actions?

We can talk about two kinds of non-voluntary actions that are quite different from each other.

(a) Little Elves that escape the Dominant Elf Coalition.



Escaping control.

Unwanted habits are a good example. The great classical pianist Glenn Gould could not stop himself from singing along with his music. You can apparently hear it in his recordings. Some Jazz musicians have the same reputation. That's amazing, because musicians are extremely finicky about clean playing and recording. And yet, they still do these involuntary things. So does everybody else. We keep trying to catch ourselves before it happens, but it does keep happening.

Slips of the tongue are similar. We don't want to make them, but we make a lot more than we think. The same is true for slips of action --- which are believed to lead to major accidents at times.

In some cases, people are known to involuntarily blurt out personal secrets, or vitally important information about criminal or political matters. They feel like they could kick themselves afterwards, but for a moment they lose control.

When these unwanted actions or feelings become chronic, they can be diagnosed as a disorder. The standard diagnostic manuals are full of conditions in which people have lost control over what they normally expect to control. That ranges from stuttering to obsessive thinking, or compulsive actions. In the feelings department, it includes unwanted anxiety or depression. In the impulse-control area, it includes impulsive anger, and so on.

So this category of unwanted actions, loss of voluntary control, ranges all the way from trivial everyday examples, to problems that really involve a lot of distress. That makes category (a) very important.

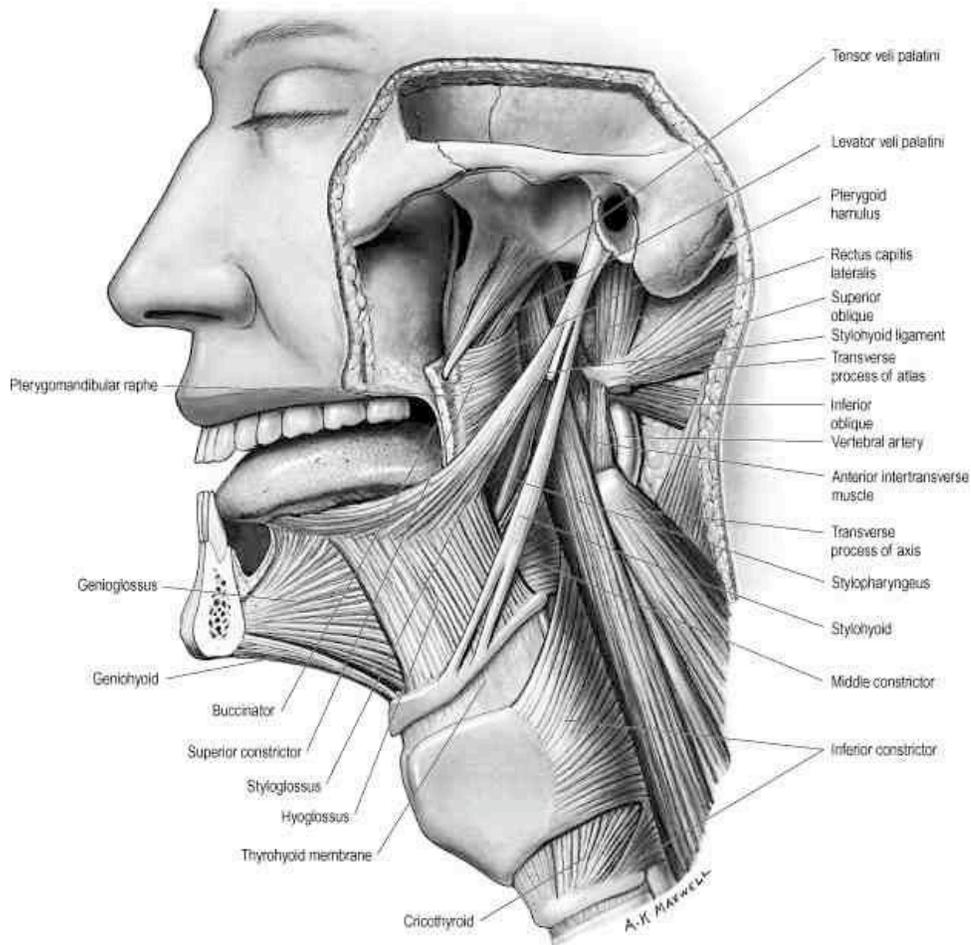
- (b) Little Elves that are allowed to act their own way with the *tacit permission* of the Dominant Elf Coalition, the self.



“At your age, Tommy, a boy’s body goes through changes that are not always easy to understand.”

Automatic actions are part of all our voluntary acts. Just imagine controlling all the movements of your mouth, tongue, vocal cords, diaphragm, when you speak. None of us can do it. Yet we learn to pronounce words the way our earliest language community expects them to be pronounced. We get so good at it that we can instantly tell if somebody is using a different dialect, or if they learned our native language later in life. It is an astonishing complex skill, the fastest and most precise skill most of us have, but we are rarely conscious of any part of it. The vocal tract is largely controlled unconsciously and automatically.

And yet, we feel we have control over what we say. The control that we have consciously and voluntarily has to do with the plan to speak, with choices we make of one word over another, when to start and stop, and so on. But we don’t voluntarily control whether we release the air in our vocal tracts 20 milliseconds before our vocal cords start to vibrate, (as in the plosive consonants, /p/, /t/, and /k/). When our voice starts before the air is released, we get the voiced consonants, /b/, /d/, and /gh/. But all those very precise actions are unconscious in their details.



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Imagine trying to control all those muscles *voluntarily*. But they work together beautifully without conscious, voluntary control, every time we speak.

Summary: A Parliament is a Theater used for control.

We can easily adapt the theater metaphor for conscious experiences to the question of voluntary control. All we have to do is use the theater to make announcements, issue instructions, debate plans and goals, and so on. So the “architecture” is the same. Only the way it is used is a little bit different.

It turns out that this view is consistent with a good deal of evidence about the mind-brain. (See Baars, 1988, at www.nsi.edu, and elsewhere).

Voluntary control involves a dominant coalition of “Elves” --- little neural processors --- that make crucial command decisions. But the details of all actions, including voluntary actions, are not under moment-to-moment voluntary control. Rather, we leave the details of controlling our extremely complex vocal tract, for example, to highly practiced automatic actions, reflexes, and biological automatisms. So most aspects of even voluntary actions are unconscious and non-voluntary. It’s just the critical decision points that need to become conscious.

All this is easy to understand in a “Parliamentary Metaphor.”

The second category of non-voluntary actions are *unwanted*. There we can talk about “escaping control.” A good example is unwanted habits, which are pretty universal, and such automatisms as the tendency of some musicians to hum along with their music. Slips of speech and action fit in this category, and more seriously, a host of psychiatric diagnoses that involve “self alien” events.

So the issue of Volition is as fundamental as Consciousness itself!