

85 - MONUMENT TO DEMOCRACY



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MIT professor Norbert Wiener describes two discrete flavors of feedback in his 1947 book *Cybernetics*. One form maintains equilibrium and preserves equilibrium through maximum adaptability. This is NEGATIVE feedback, it's schematically drawn like this:

In a NEGATIVE feedback loop, C (control) reads the current value of B (output), compares this to an ideal value, then instructs A (input) to send either a higher or lower signal to B. This produces a new value which C reads again and so on. In an air-conditioned room, for example, the thermostat (C) reads the current temperature (B), which is then compared against an ideal value, corrections are made (A) and more or less cold air is pumped in. The new temperature is read and the negative feedback loop continues, the room reaching something, close to a constant temperature, or adaptive equilibrium.

POSITIVE feedback, on the other hand, works *against* adaptability.* To produce positive feedback, one simply removes the control functions that are otherwise located where the information loop would meet itself to control its dynamic behavior. It looks something like this:

In the diagram above, there is no C to interrupt the continuous escalation of the loop: A increases B which increases A which increases B... No self-regulating decision maker exists in the loop and more action leads only to more action, indefinitely. Philosopher Manuel De Landa offers an easy image:

"The turbulent dynamics behind an explosion are the clearest example of a system governed by positive feedback. In this case the loop is established between the explosive substance and its temperature. The velocity of an explosion is often determined by the intensity of its temperature (the hotter the faster), but because the explosion self-generates heat, the process is self-accelerating. Unlike the thermostat, where the arrangement helps to keep temperature under control, here positive feedback forces temperature to go out of control."

The principal characteristic of negative feedback in the thermostat example is HOMOGENIZING effect; all deviations are filtered and eliminated. Positive feedback instead, as De Landa explains, "tends to increase heterogeneity, as small original differences are amplified by the loop into large discrepancies." So the diagram actually ought to look something more like this:

– "INNNNNNWAHHHHH!" Lars Bang Larsen, *Bulletins of The Serving Library* #4, 2012

Liam Gillick,
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