

# Revolution, no! Reform, si!

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**Abstract:** Van Gelder's hard line against representations is not supported or supportable, and his soft line in favor of dynamical systems thinking as a supplement to representational models of cognition is good advice, but not revolutionary, as he seems to think.

There seem to be two van Gelders: the "Hard Line van Gelder" says, in effect, There are no representations at all, anywhere in the brain, in any useful sense – down with representationalism! The "Soft Line van Gelder" says, in effect, We must replace misshapen

ideas of representation – for example, Newell's (1980) physical symbol system hypothesis and other GOFAI (Haugeland 1985) ideas – with more perspicuous, biologically sound versions. The trouble with the hard line is that both good, working cognitive systems (brains) and defective, hallucinating cognitive systems are dynamical systems. The eschewing of all forms of representation does not permit the theorist to distinguish veridical or reliable perceptual systems from defective or ill-designed ones, since characterizing the difference depends on the use of some semantic (i.e., representational, in the broadest sense) notion or notions. Similarly, both a trained acrobat at his best and a drunk lurching down the road bumping into things are dynamical systems. You cannot begin to explain why some dynamical systems have evolved and others, just as dynamical, have not, until you introduce informational (or semantic) considerations of some sort that let you distinguish between when an animal is getting it (roughly) right and when it is getting it wrong. Once van Gelder responds to objections like this by retreating to the soft line, a lot of what he says makes fine sense, but then it is no longer revolutionary; it is simply a worthwhile call for taking dynamics more seriously in the context of good new-fashioned cognitive science. Indeed we should, but we don't have to get on any radical bandwagon to do this; just as well, since the bandwagon isn't going anywhere we want to go. Perhaps van Gelder didn't want us to read anything so radical into his essay, but if not, I am baffled by the strategy he adopts.