

JOHN L. FALK
1928 - MARCH 23 2009
A RAUCOUS SMILING FRIEND

John Falk was a poet, behavioral pharmacologist, and behaviorist. He shared many qualities with his fellow Montréaler, Leonard Cohen, to whose music he first introduced me. He was gently and brilliantly cynical, depressive, observant, and lyrical. He is famous in his behavioral guise as the discoverer of schedule-induced polydipsia. He was on the search committee that hired me at ASU, where I gave one of those technical-but-narrow-world-view talks that such committees would, I hoped, like. He said to me after the talk “Neat stuff, Peter; but do you know what your rats would do if you stuck a water-bottle in their box during your experiments?”. I did not—somehow the secret of polydipsia had been well kept from us grad students at Harvard. I was amazed that this non-operant response could account for so much of the variance in behavior. I had things to learn.

And I got a good start at learning much of that from John; primarily his connoisseur’s attitude toward behavior: Observe, appreciate, get a taste for, get a feel for, compare, contrast, savor. For John “observe” clearly did not mean a check-list with inter-rater reliability and well-defined categories. It meant to *see*. This approach is an admirable handicap in the world of grants and publications. Yet his publications did have an impact. (As did he; although crippled in mid-life with a neuroma that made one arm useless, before that he had earned a black belt in karate.) His 1961 *Science* article on polydipsia, and *The Nature and Determinants of Adjunctive Behavior*, written 10 years later, have each been cited 500 times. A half dozen other articles on adjunctive behaviors have received hundreds of citations apiece. Polydipsia—excessive drinking induced by ‘generator schedules’ of periodic feeding—has seen important service in its use by him and his young colleague Hank Samson to induce alcoholism in rats, opening the door to animal models of addiction.

But John soon left ASU for Rutgers, where he worked for 30 years, collecting numerous

awards such as membership on the Advisory Council for NIDA, President of the Psychopharmacology Division of the American Psychological Association, Research Scientist Award from NIDA, Solvay Award for Psychopharmacology, and the Board of Trustees Award for Excellence in Research at Rutgers.

John was a discoverer rather than an analyst; nonetheless, consider this amazingly insightful theory of adjunctive behavior (from *Origin and Functions*):

Adjunctive behavior and its ethological equivalent, displacement activity, has a stabilizing function on agonistic, mating, parental, and intermittent-feeding behavior when any of these activities are in unstable equilibrium with an escape vector. This buffering action of adjunctive behavior is analogous to the diversity-stability rule of ecology in which an increase in the diversity of species stabilizes the populations of the component species, thereby preventing extinction. Opposing behavioral vectors in unstable equilibrium can function to exaggerate certain behavioral adjuncts.... The resulting increase in [behavioral entropy] ... conserves the context. (Falk, 1977, p. 325)

He sees it as a species of ritualization, and fodder for preadaptation. Thirty years on and there is, to my mind, still no better hypothesis about the provenance of adjunctive behavior.

John listened to jazz and wrote poetry, and in his latter years published three collections: *Snow and Other Guises*, *Holding Out*, and *Quiver and Notch*. I enjoyed these, and I encourage you to check them out. But I must confess that I find the best poetry in John's scientific work; not only in its essence, but in its semblance. Consider these words, cribbed at length from his Solvay Award Address (Falk, 1998, p. 97):

My final point concerns how the dynamics [of addiction] becomes even more exaggerated by well-meaning cultural forces, and in combination with the action of generator schedules, exacerbates abusive drug-seeking and drug-taking. This exaggeration occurs through the emphasis placed by popular media, by drug therapy functionaries, and by the drug abuse research enterprise, on attributing to the intrinsic actions of abused drugs a mystique of voodoo power for motivational entrapment. This is a self-fulfilling prophesy. We endlessly dwell upon how powerful these drugs are, how fatefully alluring, what wondrous sensations they give rise to, how they galvanize and motivate, how they take you over so you're not really responsible for your actions, how heroic and wise you'll be when

you come through the other side of the experience and overcome the enslavement, and if you happen to die what a beautiful and innocent loser will live in the memory of your friends. Drugs of abuse acquire reputations for possessing great powers. And in a sense they do, for they are associated with so much that is appealing and positive to the young, to those with inadequate repertoires, or who are exposed to effective generator schedules. Intrinsic abuse potential is synergized by association with such reinforcing enhancements and their mesh of idiosyncratic and socially learned discriminative stimuli, which strongly engage and channel behavior. ... to a large degree the drug abuser accepts the general social judgment concerning the almost occult power of certain drugs and pays the most damaging tribute to what is largely a social construction of enslavement that works real mischief.

To drive home the crucial importance of generator schedules in producing addictions, he went on to cite powerful non-drug reinforcers that, absent generator schedules, are not seen by society to stand as causes of misbehavior:

If you think I'm overdrawing this, think of some other very powerful reinforcers and how we endow them with much less motivational fatefulness.... Money doesn't cause embezzlement; beauty does not produce rape; éclairs are not the root of obesity; wine is not at the origin of alcoholism; guns do not incite to murder; and horsepower is not the determinant of speeding. ... none bear indubitable, fatal attractiveness as an inherent, structural quality, not by a long shot. For drugs, it takes some all-important environmental and behavioral-history conditions to produce serious drug abuse.

John, the neuroscientist and poet, puts behavior and its contingencies center-stage. He is a model for all of us; for his choice of an important problem, his single-minded study of it, his breadth of conception, his penetrating analyses; the primacy of behavior in his accounts. And a model for the demonstration that both truth and beauty can be at home in scientific prose. Don't stop when you've got it right; one more pass for elegance; one more for John.

John's last words in his prolog to *Snow* (Falk, 2000, p. 8) are a fitting epitaph:

Here I am in the best suit

I can muster to report
The chemistry of this planet,
Just for you.

...

This software macronutrient
Will serve your sinew well.
And remember, I'm the raucous
Smiling friend who told you.

I remember.

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Falk, J. L. (1998). Drug abuse as an adjunctive behavior. *Drug and Alcohol Dependence*, 52, 91-98.

Falk, J. L. (2000). *Snow and Other Guises*. Toronto: Guernica.