

Chemical Trust: Oxytocin Oxymoron?

Darby Penney, M.L.S., Glenn McGee, Ph.D.

Writing in the journal *Nature*, Michael Kosfeld and colleagues reported that intranasal administration of oxytocin, a human neuropeptide involved in maternal bonding, “causes a substantial increase in trusting behavior, thereby greatly increasing the benefits from social interactions.”¹ The double-blind study involved a trust game with real monetary stakes, in which the subjects played the role of either an investor or a trustee. Investors could choose whether and how much money to invest with an anonymous trustee, and the trustees could choose whether to honor or violate the investors’ trust. The investors who had inhaled the oxytocin invested 17% more money than those who received the placebo.

In what is becoming an increasingly tantalizing form of neuroscience, researchers in this study obtained consent not to study the phenomenon about which they were interested, trust, but rather the effect of a hormone more generally. The seemingly subtle shift in language, with its attendant deception, was obviously necessary for the researchers to conduct their study. But did they, and do researchers who would study phenomena of character more generally, have a special responsibility to inform subjects about the risks of “shifts in subject consciousness?” It is more than a question of informed consent that is at hand. For just as there is an obvious irony in manipulating subjects’ inclination to trust in order to study the biochemical basis of that trust, there is a broader safety—and indeed human—concern about whether trust should be scientifically manipulated in clinical studies in this way at all.

In reporting the findings, the Kosfeld et al. wax enthusiastic about the importance of trust in human relations and social institutions and about the potential clinical benefits of chemically enhanced trust, particularly for people with neurological or psychiatric disorders that are “associated with social dysfunctions.”² While acknowledging a hypothetical risk that their “findings could be misused to induce trusting behaviors that selfish actors subsequently exploit,”³ at least one of the authors seemed sanguine about the possibility in recent media interviews. “I don’t think we currently have such abuses,” Ernst Fehr said. “However, in the future it could happen.”⁴

The ethical issues raised by this study are legion. First, there is the matter of the consent process involved in the study. The researchers recruited 194 healthy male university students in Zurich and informed them that the experiment would test “the effects of a hormone on decision-making.”⁵ At best, this is incomplete. Their finding was that the level of trust could be manipulated using oxytocin, a much more broad claim, and one clearly preconceived in the study’s design, than was described to the prospective subjects. At worst, the information could be considered deceptive, and participants might feel that their trust, ironically, was violated.

Trust is a complex human phenomenon, involving social behavior, emotions, and values—the potential medicalization of trust is cause for concern. While the researchers focused primarily on what they viewed as the positive aspects of trust as the glue that holds families, economies and societies together, a high level of trust is not necessarily an unmitigated good. The researchers reported that the drug inhibited defensive behaviors and betrayal aversion; this necessarily leaves affected individuals more vulnerable. Essentially, a person or institution with the capability of artificially manipulating trust levels would be in a position to increase people’s level of gullibility. Artificially manipulated trust levels could compromise people’s ability to make sound judgments and put them in risky situations.

It doesn’t take a cynic to envision some of the predatory or nefarious purposes to which the findings of this study might be put in social and interpersonal interactions. The possibility that this substance could become a new date rape drug is chilling. Governments might use chemical means to enhance citizens’ trust in its policies and actions; one can only imagine how this might be used to sway public opinion or stifle dissent. Political candidates could use it to reap the benefits of unearned trust at the polls. Schools, employers and the military might use the drug to increase control over and enhance the compliance of students, workers, and soldiers. Powerful commercial interests could have a field day with oxytocin: retailers could better manipulate customers, corporations could overcome skepticism about their environmental practices or the value of their stock, and used car salesman would have an advantage that went beyond the “new car smell” aerosols they currently spray in vehicles. The number of ways in which the unscrupulous could use such a substance for harm is probably endless.

But even more troubling risks are inherent in the potential clinical interventions of oxytocin that are foreseen

1. Kosfeld, M., Heinrichs, M., Zak, P., Fischbacher, U., & Fehr, E. Oxytocin increases trust in humans. *Nature*, 435: 673–676 (2 June 2005).

2. *Ibid.*, 673.

3. *Ibid.*, 673.

4. Verrengia, J. Scientists experiment with ‘trust’ hormone. The Associated Press, June 2, 2005. www.msnbc.msn.com/id/8061292/

5. Kosfeld, M., et al., *op. cit.*, 675.

by the research team. The authors speculate that further study may result in “positive clinical implications for patients with mental disorders that are associated with social dysfunction (for example, social phobia or autism).”⁶ The history of psychiatry is fraught with cautionary tales of major violations of patients’ trust, particularly that of institutionalized patients. During the 20th century, mental patients were subjected, most often without informed consent, to brain-damaging procedures such as insulin coma therapy, electroshock, and lobotomy; to life-long loss of liberty, physical brutality and mechanical restraint; and to powerful psychiatric drugs with dangerous, debilitating, and sometimes lethal side-effects. With the exception of insulin coma and lobotomy, these practices continue in the 21st century, and informed consent procedures involving people with psychiatric disabilities continue to be less than optimal.⁷ Psychiatric inpatients, as well as other institutionalized people, such as those with developmental and neurological disabilities, are inherently at the mercy of the people who run and staff the wards. Inside an in-

stitution, skepticism and guardedness are self-preservation techniques, and trust needs to be earned by clear and convincing evidence. The possibility of chemically manipulating the trust levels of vulnerable institutionalized people, particularly by doctors who believe they are doing so for the patients’ own good, is a disturbing and chilling prospect.

Given the wide range of possibilities for abuse inherent in the use of a hormone that is already available in the United States by prescription in both nasal spray and injectable forms, healthy skepticism and enthusiastic debate would be a wise response to the findings of this study. But one scientist apparently thinks it is too late for that. Writing in the same issue of *Nature* in which the oxytocin study appeared, Antonio Damasio, a neurologist at the University of Iowa College of Medicine, said that “civic alarm at the prospect of such abuses should have started long before this study, and the authors cannot be blamed for raising it.”⁸ Perhaps the responsibility for introducing the question of trust in this research, though, really did lie with the researchers.

6. Ibid, 675.

7. Whitaker, R. *Mad in America: Bad medicine, bad science, and the enduring mistreatment of the mentally ill*. NY: Perseus Press, 2001.

8. Damasio, A. Human behavior: Brain trust. *Nature*, 435: 571–6572 (2 June 2005).