

# **Approaching Real World Behavior: Enhancing External Validity of Psychological Research**

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## **Introduction**

After defining the subject's primary goal as describing and explaining certain aspects of behavior, contemporary introductory courses and textbooks in various psychological subdisciplines reveal an odd selection of behaviors intended to be investigated: filling out self-report scales and pressing keys in computerized experiments. Across the issues of the premier journal within the field of personality and social psychology, for instance, Baumeister, Vohs and Funder [1] reported a steady decline of the proportion of studies involving the measurement of actual behavior since the early 1980s down to barely 20% in 2006. This increasingly narrow focus in methodology comes along with a substantial restriction to the range of phenomena addressed by modern psychology [2]. By means of the exemplary experimental and observational settings introduced in the present paper, we attempt to expand this focus and, thereby, to overcome some of the classical problems associated with predominant approaches to human behavior.

## **Illegal pedestrian road crossing behavior**

Identifying risk factors associated with pedestrians' tendency to cross against the lights is crucial to enhance traffic safety. A substantial part of psychological research within this field applies the theory of planned behavior [3] in order to investigate the influence of attitudes, subjective norm and perceived behavioral control on illegal crossing behavior. However, these studies [4] do not examine the constructs' impact on actual behavior, but on the reported intention to violate traffic rules in a fictitious scenario. Regarding the repeatedly observed inconsistency between (a) attitude and behavior and (b) hypothesized and actual behavior, respectively, this approach appears to be conceptually inappropriate. As an alternative, we developed a stimulus control model based on applied behavior analysis, identified discriminative stimuli conflicting with the inhibitory potential of the red traffic light, and examined the association between the occurrence of these stimuli and illegal pedestrian crossing behavior by means of a systematic observational study. We found that contradictory stimulus configurations strongly increase the odds of crossing against the lights. Investigating the determinants of this particular behavior in the field enables the development of tailored road safety measures which change actual behavior and not only some marginally correlated internal constructs.

## **Lie detection**

Lie detection in an experimental context is usually investigated with the so-called "mock crime paradigm" [5]. It is, however, questionable whether an instructed lie is comparable to a real-life lie. To date, the adequacy of this experimental setting remains to be shown. If we want to make a scientific statement about lying behavior, we have to create experiments which reflect the crucial aspects of natural social interactions. Hence, within an alternative framework, we investigate deception and its detection with the aid of a multiplayer role-playing game. This setting allows us to dispense with instructing the subjects to lie because the contingencies requiring players to perform deceptive behavior are imposed by the game itself. In contrast to most of the predominant lying tasks, the subjects do not even have to know about the true background of the investigation. By suggesting a cover story, subjects' reactivity to the experimental procedure can be reduced and, thus, lying behavior can be observed in a more natural, unbiased context. Compared to the mock crime studies, the context of deception produced by a role-playing game is less artificial and the quality of a lie is of greater importance to the individual. Hence, arousal, emotions, verbal and nonverbal cues associated with lying are more likely to occur,

behavioral and psychophysiological results are more likely to appropriately reflect the lying processes comparable to those operating in everyday situations.

## Cooperative behavior

Whereas the increasing interest in human cooperation in general and indirect reciprocity in particular has inspired a large body of computer simulations and internally valid experiments under controlled laboratory conditions, conclusive field data is still lacking. In order to evaluate to which extent postulated mechanisms of reciprocity account for cooperation in “the real world”, natural field experiments are crucially required [6]. Hence, we examined the appropriateness of a “real-world” setting to investigate the predictions of image-dependent indirect reciprocity [7]. In a German supermarket, one of a number of confederates of the experimenter lines up at the checkout appearing to buy a single item (a 0.5 liter bottle of mineral water or a corresponding amount of beer). The waiting person in front of the confederate (i.e., the experimental subject) can, as a potential donor in an altruistic act, let the confederate go ahead which obtains a benefit for the confederate and a cost for the experimental subject (defined as waiting time). The number of items bought by the experimental subject and his/her behavior, as well as the number of observers of the situation are recorded. First results indicate, consistent with the model of indirect reciprocity, that the decision to cooperate in one-shot interactions with strangers depends on the cost-to-benefit-ratio of the altruistic act and that the range of accepted cost-to-benefit-ratios constitutes a behavioral measure sensitive to variations of the recipient’s image.

## Conclusion

We believe that the empirical approaches illustrated above can pave the way for more externally valid inferences in each of the particular areas of research. More generally, we propose that behavior-oriented psychology, in order to enable a better understanding of human complexity, should focus again on its original interest: actual behavior.

## References

1. Baumeister, R.F., Vohs, K.D., & Funder, D.C. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior? *Perspectives on Psychological Science* **2**, 396-403.
2. Rozin, P. (2001). Social psychology and science: Some lessons from Solomon Asch. *Personality and Social Psychology Review* **5**, 2-14.
3. Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes* **50**, 179-211.
4. Holland, C., Hill, R. (2007). The effect of age, gender and driver status on pedestrians’ intentions to cross the road in risky situations. *Accident Analysis and Prevention* **39**, 224-237.
5. Ekman, P. (2009). *Telling Lies: Clues to Deceit in the Marketplace, Politics, and Marriage* (3rd Edition). New York: Norton & Company.
6. Guala, F. (2012). Reciprocity: weak or strong? What punishment experiments do (and do not) demonstrate. *Behavioral and Brain Sciences* **35**, 1-59.
7. Nowak, M.A. & Sigmund, K. (1998). Evolution of indirect reciprocity by image scoring. *Nature* **393**, 573-577.