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Is Psychology Still a Science of Behaviour?

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Abstract

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Forum Paper

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Is Psychology Still a Science of Behaviour?

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Abstract

Since the 1970s, social psychology has examined real human behaviour to an increasingly smaller degree. This article is an analysis of the reasons why this is so. The author points out that the otherwise valuable phenomenon of cognitive shift, which occurred in social psychology precisely in the 1970s, naturally boosted the interest of psychologists in such phenomena like stereotypes, attitudes, and values; at the same time, it unfortunately decreased interest in others, like aggression, altruism, and social influence. In recent decades, we have also witnessed a growing conviction among psychologists that explaining why people display certain reactions holds greater importance than demonstrating the conditions under which people display these reactions. This assumption has been accompanied by the spread of statistical analysis applied to empirical data, which has led to researchers today generally preferring to employ survey studies (even if they are a component of experiments being conducted) to the analysis of behavioural variables. The author analyses the contents of the most recent volume of "Journal of Personality and Social Psychology", and argues that it is essentially devoid of presentations of empirical studies in which human behaviours are examined. This gives rise to the question of whether social psychology remains a science of behaviour, and whether such a condition of the discipline is desirable.

Keywords

social psychology; behavioural research; dichotomic variable; uncertainty principle

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The eruption of the scandal involving academic fraud committed by Diederik Stapel led to the emergence of a large number of exceptionally important initiatives among social psychologists that addressed the crisis that had engulfed our discipline. Attention was drawn to the need to replicate studies, to place greater emphasis on effect size than on the significance of differences between averages, and the idea of pre-registration of studies was floated. And while we may not yet claim that social psychology is clearly and unequivocally in a better condition than a decade, or even several decades ago (Motyl et al., 2017), the mere fact of the developing debate on the subject and growing awareness of the issues involved is of fundamental importance.

The objective of this article, however, is to focus attention on an entirely different issue, itself also associated with social psychology. Before the beginning of the scandal associated with Stapel's fraud, the pages of *Perspectives on Psychological Science* published an article by Baumeister, Vohs, and Funder (2007) with the meaningful title "Psychology as the science of self reports and finger movements". The authors of this article pointed out that while psychology is defined as the science of behaviour, at present behaviours do not constitute the primary object of its interest. Insofar as both animal and developmental psychologists do, in fact, observe and analyse behaviours (as the authors jokingly suggest: maybe because they are incapable of inducing their subjects – animals and small children, all unable to write – to fill in surveys), in the case of social psychology, behaviours other than the completion of surveys, pressing of keys on a computer keyboard, or clicking a mouse are quite rare. The authors review the then-most recent (January 2006) edition of the flagship journal of our discipline, *Journal of Personality and Social Psychology*, and conclude: "It is undeniably a fine issue, offering important advances in the topics the articles address. The methods are rigorous, and the discussions are thoughtful. The editors, reviewers, and authors did their jobs well. But behavior is hard to find." Later, they write that even if the authors of articles do study some behaviour, it is a highly specific one – (…) "human behavior is almost always performed in a seated position, usually seated in front of a computer. Finger movements, as in keystrokes and pencil marks, constitute the vast majority of human actions" (p. 397).

What About Now?

Before we engage in consideration of what lies at the roots of that which the aforementioned authors describe with tongues firmly planted in their collective cheek, and of what, exactly, it means for our discipline, let us attempt to perform a systematic analysis of the last edition of that very same journal reviewed by Baumeister, Vohs, and Funder (2007). This is – at the time of writing of this article – the most recent edition of *Journal of Personality and Social Psychology*. Volume 113 encompasses the second half of 2017, and is composed of 6 issues (as is every volume of *JPSP*), containing a total of 49 articles.

Table 1 presents in the third column the number of studies described in particular articles, while the next column contains the number of such studies in which behaviours

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Table 1
Analysis of Studies Described in Contents of Volume 113 Journal of Personality and Social Psychology

Issue	Authors	Title	Number of studies[a]	Number of studies with behaviour as a dependent measure
1	Slepian, Michael L.; Chun, Jinseok S.; Mason, Malia F.	The Experience of Secrecy	10	0
1	Motyl, Matt; Demos, Alexander P.; Carsel, Timothy S.; Hanson, Brittany E.; Melton, Zachary J.; Mueller, Allison B.; Prims, J. P.; Jiaqing Sun; Washburn, Anthony N.; Wong, Kendal M.; Yantis, Caitlyn; Skitka, Linda J	The State of Social and Personality Science: Rotten to the Core, Not So Bad, Getting Better or Getting Worse?	2	0
1	Wilson, John Paul; Hugenberg, Kurt; Rule, Nicholas O.	Racial Bias in Judgments of Physical Size and Formidability: From Size to Threat	11	0
1	Miller, Joan G.; Akiyama, Hiroko; Kapadia, Shagufa	Cultural Variation in Communal Versus Exchange Norms: Implications for Social Support	2	0
1	McCarthy, Megan H.; Wood, Joanne V.; Holmes, John G.	Dispositional Pathways to Trust: Self-Esteem and Agreeableness Interact to Predict Trust and Negative Emotional Disclosure	7	0
1	Soto, Christopher J.; John, Oliver P.	The Next Big Five Inventory (BFI-2): Developing and Assessing a Hierarchical Model With 15 Facets to Enhance Bandwidth, Fidelity, and Predictive Power	3	0
1	Sutin, Angelina R.; Luchetti, Martina; Stephan, Yannick; Robins, Richard W.; Terracciano, Antonio	Parental Educational Attainment and Adult Offspring Personality: An Intergenerational Life Span Approach to the Origin of Adult Personality Traits	1	0
1	Stoll, Gundula; Rieger, Sven; Lüdtke, Oliver; Nagengast, Benjamin; Trautwein, Ulrich; Roberts, Brent W.	Vocational Interests Assessed at the End of High School Predict Life Outcomes Assessed 10 Years Later Over and Above IQ and Big Five Personality Traits	1	0
2	Yang Bai; Maruskin, Laura A.; Serena Chen; Gordon, Amie M.; McNeil, Galen D.; Stellar, Jennifer E.; Kaiping Peng; Keltner, Dacher	Awe, the Diminished Self, and Collective Engagement: Universals and Cultural Variations in the Small Self	6	0
2	Klein, Nadav; O'Brien, Ed	The Power and Limits of Personal Change: When a Bad Past Does (and Does Not) Inspire in the Present	8	0
2	LeBel, Etienne P.; Campbell, Lorne; Loving, Timothy J.	Benefits of Open and High-Powered Research Outweigh Costs	NONEMPIRICAL PAPER	

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Table 1 (continued)
Analysis of Studies Described in Contents of Volume 113 Journal of Personality and Social Psychology

Issue	Authors	Title	Number of studies[a]	Number of studies with behaviour as a dependent measure
2	Finkel, Eli J.; Eastwick, Paul W.; Reis, Harry T.	Replicability and Other Features of a High-Quality Science: Toward a Balanced and Empirical Approach	NONEMPIRICAL PAPER	
2	LeBel, Etienne P.; Campbell, Lorne; Berger, Derek; Loving, Timothy J.	Falsifiability Is Not Optional	NON-EMPIRICAL PAPER	
2	Kesebir, Selin	Word Order Denotes Relevance Differences: The Case of Conjoined Phrases With Lexical Gender	7	0
2	Schriber, Roberta A.; Chung, Joanne M.; Sorensen, Katherine S.; Robins, Richard W.	Dispositional Contempt: A First Look at the Contemptuous Person	6	0
2	Gordon, Amie M.; Anderson, Craig L.; McNeil, Galen D.; Stellar, Jennifer E.; Loew, Daniel; Keltner, Dacher.	The Dark Side of the Sublime: Distinguishing a Threat-Based Variant of Awe	6	0
2	Jones, Daniel N.; Paulhus, Delroy L.	Duplicity Among the Dark Triad: Three Faces of Deceit	5	4
3	Gawronski, Bertram; Armstrong, Joel; Conway, Paul; Friesdorf, Rebecca; Hütter, Mandy	Consequences, Norms, and Generalized Inaction in Moral Dilemmas: The CNI Model of Moral Decision-Making	8	0
3	Landy, Justin F.; Walco, Daniel K.; Bartels, Daniel M.	What's Wrong With Using Steroids? Exploring Whether and Why People Oppose the Use of Performance Enhancing Drugs	13	0
3	Chou, Eileen Y.; Halevy, Nir; Galinsky, Adam D.; Murnighan, J. Keith	The Goldilocks Contract: The Synergistic Benefits of Combining Structure and Autonomy for Persistence, Creativity, and Cooperation	9	7
3	White II, Mark H.; Crandall, Christian S.	Freedom of Racist Speech: Ego and Expressive Threats	8	0
3	Huang, Karen; Yeomans, Michael; Brooks, Alison Wood; Minson, Julia; Gino, Francesca	It Doesn't Hurt to Ask: Question-Asking Increases Liking.	4	0
3	Zeinoun, Pia; Daouk-Öyry, Lina; Choueiri, Lina; van de Vijver, Fons J. R.	A Mixed-Methods Study of Personality Conceptions in the Levant: Jordan, Lebanon, Syria, and the West Bank	2	0
3	Thrash, Todd M.; Maruskin, Laura A.; Moldovan, Emil G.; Oleynick, Victoria C.; Belzak, Will C.	Writer-Reader Contagion of Inspiration and Related States: Conditional Process Analyses Within a Cross-Classified Writer × Reader Framework	1	0

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Table 1 (continued)
Analysis of Studies Described in Contents of Volume 113 Journal of Personality and Social Psychology

Issue	Authors	Title	Number of studies[a]	Number of studies with behaviour as a dependent measure
3	Credé, Marcus; Tynan, Michael C.; Harms, Peter D.	Much Ado About Grit: A Meta-Analytic Synthesis of the Grit Literature	NON-EMPIRICAL PAPER	
4	Hehman, Eric; Sutherland, Clare A. M.; Flake, Jessica K.; Slepian, Michael L.	The Unique Contributions of Perceiver and Target Characteristics in Person Perception	5	0
4	Bjornsdottir, R. Thora; Rule, Nicholas O.	The Visibility of Social Class From Facial Cues	13	0
4	Cortland, Clarissa I.; Craig, Maureen A.; Shapiro, Jenessa R.; Richeson, Jennifer A.; Neel, Rebecca; Goldstein, Noah J.	Solidarity Through Shared Disadvantage: Highlighting Shared Experiences of Discrimination Improves Relations Between Stigmatized Groups	5	0
4	Stanton, Sarah C. E.; Campbell, Lorne; Pink, Jennifer C.	Benefits of Positive Relationship Experiences for Avoidantly Attached Individuals	3	0
4	Savani, Krishna; Job, Veronika	Reverse Ego-Depletion: Acts of Self-Control Can Improve Subsequent Performance in Indian Cultural Contexts	6	6
4	Köber, Christin; Habermas, Tilmann	How Stable Is the Personal Past? Stability of Most Important Autobiographical Memories and Life Narratives Across Eight Years in a Life Span Sample	1	0
4	Neal, Jennifer Watling; Durbin, C. Emily; Gomik, Allison E.; Lo, Sharon L.	Codevelopment of Preschoolers' Temperament Traits and Social Play Networks Over an Entire School Year	1	1
4	Borghuis, Jeroen; Denissen, Jaap J. A.; Oberski, Daniel; Sijtsma, Klaas; Meeus, Wim H. J.; Branje, Susan; Koot, Hans M.; Bleidorn, Wiebke	Big Five Personality Stability, Change, and Codevelopment Across Adolescence and Early Adulthood	1	0
5	Perfecto, Hannah; Galak, Jeff; Simmons, Joseph P.; Nelson, Leif D.	Rejecting a Bad Option Feels Like Choosing a Good One	5	0
5	Bhattacharjee, Amit; Dana, Jason; Baron, Jonathan	Anti-Profit Beliefs: How People Neglect the Societal Benefits of Profit	7	0
5	Murray, Sandra L.; Lamarche, Veronica M.; Gomillion, Sarah; Seery, Mark D.; Kondrak, Cheryl	In Defense of Commitment: The Curative Power of Violated Expectations	5	0
5	Kreps, Tamar A.; Laurin, Kristin; Merritt, Anna C.	Hypocritical Flip-Flop, or Courageous Evolution? When Leaders Change Their Moral Minds	15	0

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Table 1 (continued)
Analysis of Studies Described in Contents of Volume 113 Journal of Personality and Social Psychology

Issue	Authors	Title	Number of studies[a]	Number of studies with behaviour as a dependent measure
5	Ho, Arnold K.; Kteily, Nour S.; Chen, Jacqueline M.	You're One of Us": Black American's Use of Hypodescent and Its Association With Egalitarianism	4	0
5	Philippe, Frederick L.; Vallerand, Robert J.; Bernard-Desrosiers, Léa; Guilbault, Valérie; Rajotte, Guillaume	Understanding the Cognitive and Motivational Underpinnings of Sexual Passion From a Dualistic Model	6	0
5	Gebauer, Jochen E.; Sedikides, Constantine; Schrade, Alexandra	Christian Self-Enhancement	20	0
5	Dunlop, Patrick D.; Bourdage, Joshua S.; de Vries, Reinout E.; Hilbig, Benjamin E.; Zettler, Ingo; Ludeke, Steven G.	Openness to (Reporting) Experiences That One Never Had: Overclaiming as an Outcome of the Knowledge Accumulated Through a Proclivity for Cognitive and Aesthetic Exploration	5	0
6	Browman, Alexander, S.; Destin, Mesmin,; Molden, Daniel, C.	Identity-specific motivation: How distinct identities direct self-regulation across distinct situations	6	0
6	Deri, Sebastian; Davidai, Shai; Gilovich, Thomas	Home alone: Why people believe others' social live are richer than their own	11	0
6	Tully, Stephannie; Meyvis, Tom	Forgetting to remember our experiences: People overestimate how much they will retrospect about personal events	5	0
6	Krosh, AmyR; Tyler, Tom R; Amodio, David M.	Race and recession: Effects of economic scarcity on racial discrimination	5	0
6	Schroeder, Juliana; Fishbach, Ayelet; Schein, Chelsea; Gray, Kurt	Functional intimacy: Needing – but not wanting-The touch of a stranger	5	0
6	Haeffel, Gerald J.	Don't sleep on it: Less sleep reduces risk for depressive symptoms in cognitively vulnerable undergraduates	3	0
6	Yap, Stevie C.Y.; Wortman, Jessica; Anusic, Ivana; Baker, S. Glenn; Scherer, Laura D; Donnellan, M. Brent; Lucas, Richard E.	The effect of mood on judgments of subjective well-being: Nine tests of the judgment model	9	0
6	Tomasik, Martin, J; Knecht, Michaela; Freund, Alexandra M.	Some evidence for the usefulness of an optimal foraging theory perspective on goal conflict and goal facilitation	3	0

[a] In conditions where the authors denoted studies with a number and a letter (e.g., 1A, 1B, 1C), they are treated in the table as separate studies.

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other than those consisting of filling in surveys or responding to questions are studied. Comparison of these numbers leads to shocking results. The number of articles presenting studies in which the dependent variable consisted of a real behaviour was 4. If we subtract four articles not of an empirical nature from the total number of 49, this means that behaviours were the object of interest for just under 9% of texts. The proportion of behavioural studies to all studies presented in the analysed articles is perhaps even more telling. Out of a total number of 290 studies presented in the volume of *JPSP* under analysis, a mere 18 (and thus, around 6%) addressed behaviours. Let us also examine the types of behaviours that were studied, as this is highly symptomatic. Jones and Paulus studied deception. The study participants either took advantage of imperfections in a computer programme, or over-reported their own achievements. In a study by Chou, Halvey, Galinsky and Murningham, the behaviour was the number of tasks solved by participants, and (in one experiment) behaviour during an attempt at solving the prisoner's dilemma. Savani and Job examined the endurance of participants in solving cognitive tasks. As we can thus see, *not a one* of the studies involved exploration of behaviours associated with something other than a sitting posture and the movement of fingers on the part of the participants! In the entire analysed volume there is only one (!) study in which psychologists explored real behaviours performed by participants. This is the study by Neal, Durbin, Gomog and Lo, in which social interactions of pre-school children were observed (Baumeister, Vohs, and Funder (2007) would certainly remark that this exception occurred only because pre-school children are not capable of completing surveys asking about their preferred social interactions, but I wouldn't like to judge the matter in haste. I prefer to believe that the authors are absolutely exceptional and prefer studies of real behaviours).

Why Are Things the Way They Are?

Of course, the question arises as to what caused this dramatic departure by social psychology from the study of real behaviours. Baumeister, Vohs, and Funder (2007) estimate that in 1976, roughly 80% of the texts published in *JPSP* were dedicated to the study of behaviours. A mere ten years later, this percentage was already three times smaller! It then declined gradually and consistently, in 2006 achieving a level of around a dozen percent. As we can see, today there are practically no such studies to be found there.

The fact that this departure from the study of behaviour took place in the 1970s would seem to be clearly linked with the so-called cognitive revolution taking place in social psychology at the time. In their attempts to explain the causes of human behaviours, psychologists began invoking knowledge on the processing of information, attention, and memory. Interest in that which could be measured rather than directly observed naturally led to a decline in psychologists' interest in certain issues, coupled with a growth of interest in others. And thus, psychologists examined with decreasing frequency such things as altruism and aggression (and thus behaviours), while more frequently taking up stereotypes and

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judgements about the social world (and thus beliefs). If we look at the titles of the newest articles in *JPSP*, given in Table 1, this can be seen in exceptionally sharp focus.

It would also seem that, independently of the aforementioned cognitive revolution, psychology in recent decades has taken an increasingly intense interest not in defining causal nexuses (*id est* when a certain behaviour occurs), but rather the psychological mechanisms standing behind those behaviours. To put it differently, psychology focused on the issue of why people in a given situation behaved in a given manner. A good example of this approach is an article by one of the most prominent psychologists of recent decades, Arie Kruglanski (2017). It begins with the following declaration: "The phenomenon of human action has long been a central topic of psychological interest. Whereas thoughts and feelings are undeniably important, it is when they translate into action that they have the greatest impact on individuals and societas" (p. 196). In accordance with this declaration, the author presents a theoretical model, demonstrating successive phases in which desire gradually evolves into goal formation, which, in turn, and when a range of conditions are met, evokes behaviour oriented towards the achievement of a goal. The article concludes with a list of postulates related to further work on the outlined model. Kruglanski suggests that "more work is needed concerning the relative weights that different individuals or the same ones in different circumstances assign to the Want and Expectancy components of motivational readiness" (p. 204). Another desirable direction for studies should, in his view, "explore the present proposal that incentives exert their motivating effects via activation of a latent want and the elevation of expectancies about goal attainment" (p. 204). The final question that Kruglanski feels is worthy of consideration in the context of what should be done in the future is the suggestion of neuropsychological studies to verify the assumptions of his model. This is both symptomatic and amazing that the author, declaring at the outset that he is concerned with examining the causes of a behaviour doesn't see even the slightest need to examine behaviour! It could be said that this is an exceptionally typical approach for contemporary social psychology. The assumption that explaining why a given behaviour occurs is more important than examining the causes themselves of the behaviour, combined with the aversion of psychologists to studying behaviour *per se,* has led to contemporary psychology explaining basically everything aside from behaviours. I would even say that it explains explanations more frequently than it does behaviours.

While analysis of only the titles of articles in Table 1 indicates that social psychologists are interested primarily in judgements, opinions, attitudes, norms, and social perception, they do sometimes discuss behaviour. For example, let us turn our attention to an article by Julian Schroeder, Ayelet Fishbach, Chelsea Schein and Kurt Gray. They analysed what happens with an individual in conditions where their need for intimacy is disrupted in an obvious manner through the touch of a stranger. After a series of four experiments in which participants were asked to imagine being touched by others, they declared in their article a fifth experiment, to come in the form of a field study. I felt that I had the absolute right to note in the article the appearance of a study of behaviour. As it turned out, the authors did

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in fact use the natural context of a flu shot clinic, but they did not examine the behaviour of participants during the treatment, and instead asked them about all sorts of things (such as whether they would prefer to roll their sleeve up or take off their jacket, or whether they would prefer to minimise or maximise eye contact with the nurse). The field study was thus "field" only with regard to the place where the study was conducted, but not regarding the manner in which it was performed.

Of course, there wouldn't be any problem if the declarations made by people about how they behave were consistent with their real behaviour. Yet there is a mountain of evidence that, in many situations, the opposite is true. In a survey conducted on behalf of Deutsche Bank (2014), respondents were asked what they would spend 5 million zlotys (a bit more than 1 million euro) on if they won such a sum in the lottery or received it as an inheritance. 27.5% of them responded that they would give a significant portion of the money to the poor. Reality, however, demonstrates that it is exceptionally rare for winners to donate even a portion of their winnings to charitable causes (Kaplan, 1987). Significant discrepancies between declarations about one's behaviour and real behaviour are also uncovered by psychological studies. For example, Tomasz Grzyb (2016), in a study exploring the mechanism of distribution of responsibility, examined how the number of people sitting in a train compartment impacted the likelihood that an individual would react to another passenger's attempt at stealing from a woman who had left the compartment for a moment. It turned out, in line with a classic law of psychology, that participants react with far greater frequency when they are the sole witness of a theft compared to conditions in which there are three witnesses. However, if the situation is merely described to participants (some in conditions where they are the sole witness, and others where they are one of three witnesses) and they are asked how they would behave, information about the number of witnesses was of no significance in their responses. A review of intercultural studies by Peng, Nisbett, and Wong (1997) demonstrates that if we compare people living in particular cultures on the basis of their verbal declarations, we obtain an entirely different picture than when we compare their real behaviours. This concerns such diverse spheres of activity like polite behaviour at the table, time spent on a sporting activity, or keeping things clean and tidy. Another no less spectacular example of discrepancies between how people behave in real situations and how they respond to the question of how they would behave can be seen in classic studies of obedience carried out in the Milgram paradigm (Milgram, 1974). Grzyb and Doliński (2017) demonstrated that even among people familiar with the Milgram studies, the conviction is dominant that they would quickly, *id est* during the first phase of the experiment, refuse to carry out the experimenter's orders.

When the Tail Wags the Dog

Why, then, do social psychologists not bother to study real behaviours even when they declare in their articles that they are, but in fact are only asking people how they would behave in a given situation? It would seem that there are at least two causes at the heart of

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this state of affairs. Firstly, studying real behaviours is far more difficult and far more involving than studying verbal declarations. And the second cause? An observed behaviour is frequently of a binary character. Someone either assists a visually-impaired person crossing the street, or does not. Someone either gives back a fountain pen found in the hallway of a university building, and someone else fails to do so. Someone either participates (or does not) in elections, somebody takes part in a street protest, someone signs a petition. Someone else gives someone change for a high-denomination banknote or does not, someone stops their car to assist a driver whose car has stopped in the middle of the road, while another person doesn't. Thus, of key importance is, for example, whether someone behaves altruistically or not (e.g., gives a donation or does not), and whether they behave honestly in a given situation or not (e.g., steals money or does not). This dichotomous character of the dependent variable excludes the application of many refined statistical analysis techniques (or, when given a very large sample size, makes them possible, but as we have already mentioned, the sheer amount of work required to conduct such studies makes this difficult). So, if a researcher wishes to "get a result", they will prefer to avoid a binary dependent variable. The problem is, however, that if we adapt our method based on the possibility of conducting the right analyses, rather than seeking out statistical models that allow us to study reality, we are creating an absurd state of affairs. Avoiding a dichotomic dependent variable and planning studies to make behaviours measurable on an interval scale makes a mockery of the experimental study. The means of data analysis should be selected to fit the problem being studied, and not the problem defined and empirically operationalised in order to generate easy-to-calculate results. To put things more directly, the dog should wag the tail rather than the tail wagging the dog.

What is more, social psychologists' treatment of measurement scales in psychological studies supposedly measuring behaviour, but *de facto* "declared inclination towards defined behaviours" as interval scales is more than problematic. For example, a scale in which we asked "what amount of money (from 0 to 100 EUR) would you give to charitable causes?" is only superficially an interval scale. In reality, the difference between 0 and 1 is only mathematically equivalent to the difference between 33 and 34. Essentially, between 0 and 1 there is a tremendous qualitative difference: nothing vs. something – refusal to help vs. involvement. The same is true of deception. Deception 1 in 10 times is something significantly different from not deceiving a single time, while the difference between deceiving six times and seven times is *de facto* quite small.

That said, perhaps the tail wagging the dog looks more elegant, or at least this is how it seems to social psychologists. Just like the elegance with which figures presenting structural equation models appear in articles. Social psychologists, in publishing the results of their studies, based on participants completing several surveys, presenting a complex graph, frequently do not even consider that their data can serve as the basis for constructing several, or even several dozen alternative models. They do not consider that there are frequently no grounds on which to declare that the model preferred by the researcher is better than others as the relevant fit goodness factors are very close to one another.

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A similar problem also affects analyses of mediation, which have come to dominate contemporary social psychology. After an initial period of fascination with this method, there are presently a number of discussions underway as to their limitations (see, e.g., Aguinis, Edwards, & Bradley, 2016; Valente, Pelham, Smyth, & MacKinnon, 2017). A detailed elaboration of this issue would go beyond the scope of the present article, but as Fiedler, Harris, and Schott (2018) recently proved (analyzing every mediation model published in 2015) the vast majority of studies consider neither alternative mediation models nor alternative variables treated as mediators, which is obviously more than problematic because a test of mediation is by definition conditional. In this context it is also worth citing an analysis performed by Lilianna Kostrzanowska-Jarmakowska (2017). In it, she demonstrated that adding an additional variable to a model (specifically: to the results attained by participants in a successive survey) may generate not only a change in the value of the factors in the model (which should be obvious), but also a change in their status from "plus" to "minus", or vice-versa! She suggests the term "corollary" as a label for this phenomenon, demonstrating how easily we in psychology can draw conclusions on the basis of mediation analyses about dependencies that *de facto* do not exist. The primary problem lies in the fact that the situation cannot be remedied by adding one more variable, or by handing the participant one more survey. Indeed, we don't know what kind of survey that should be.

An approach based on using surveys to measure practically everything which seems sensible from the theoretical perspective, displaying the results in the form of complex models bursting with arrows and numbers, is, of course, driven by the desire to write an article that will be easily published. But this is a dead end that our discipline has travelled towards. The tail is wagging the dog, and this is only a superficially pleasant sight!

The Uncertainty Principle and the Reality of Contemporary Social Psychology

There remains another serious problem with the study methodology dominant in today's social psychology based on participants completing a battery of surveys. It is obvious that such conditions can produce artefacts by tired or impatient participants becoming both less and less attentive, and more and more sloppy. Apart from this obvious issue, there is yet another that is rarely pointed out, but which, in my view, seems far more impactful.

In accordance with Werner Karl Heisenberg's uncertainty principle (Heisenberg, 1927), a measurement can disrupt the state of the object being measured. As far as psychology is concerned, this means that in measuring (e.g., with surveys, conversation, or psychophysiological apparatus) human attitudes or behaviours, we are altering their course. To put it differently, this course is different in a situation where we are measuring it than in one where we are not measuring it.

The uncertainty principle also applies to studies in which people are first asked to describe themselves in a survey, and then we examine semantic behaviour associated with

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that self-description. Let us imagine that the dependent variable is the exhibition by participants of altruism or honesty (in this case, it doesn't matter whether it is real or declarative), and self-description surveys completed by the participant previously contained questions about such values as morality, or altruistic attitudes towards people and altruistic behaviours. Individuals answering such survey questions think about the kind of people they are, and therefore they recall events that allow them to find answers to those questions. As a consequence, they begin to perceive themselves as, for example, not very altruistic, or "generally honest". In accordance with the experimental design adopted by the investigator, the participants may then make a decision about a behaviour (or consider how they would behave). The mental accessibility of the answers just given in the survey questions now has an obvious influence on this key stage of the experiment. An important question therefore arises of whether the observed results came about only because the experimenter had previously asked the participant to complete a self-description survey. In other words, is it not the case that only the content of the survey forces the participants to consider such issues as whether or not they are altruistic or honest, and then to behave in a specified manner? Perhaps if participants had not completed that survey, they would not consider what kind of people they are, and by the same token would not behave a moment later consistently with that conclusion. In other words, it may be the case that it is not (as the experimenter assumes) the given measured characteristic, attitude, or value that influences the participants' behaviour, but merely the momentary focus provoked unintentionally by the experimenter on specific content that does so.

Thus, if we introduce mediations and moderators into the experimental design, we should also include in our design conditions in which these elements are absent (participants do not complete any surveys)! And only if it turns out that the influence of the independent variable on the dependent variable is the same in conditions where measures of mediations and moderators are absent compared to conditions in which that element is present may we reject the hypothesis that the mere fact of completing a particular survey has influenced participants' behaviours. This would seem rather obvious, but in social psychology it is simply not done.

Concluding Remarks

In 2009, *Perspectives on Psychological Science* published an article under the meaningful title *We have to break up* (Cialdini, 2009). This piece was authored by the outstanding social psychologist Robert Cialdini. In it, he points out that the focus of social psychology on the cognitive factors explaining behaviour and the associated popularisation of mediation analysis means nothing less than the death of field studies. The logic of field studies makes it impossible for people walking down the street, sitting in a cafe, or entering a library to complete a survey before the dependent variable is measured. This would be entirely incompatible with experimental realism, and would negate the foundations of the psychological field study, in which participants should be utterly unaware of their

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participation in the experiment (or they should at least be unaware of the true object of the study).

Neither Cialdini, nor the author of this article question to the slightest degree the need and the sense of studies concerning things other than real human behaviours. Social psychology would be senseless without examining attitudes, stereotypes, the self-structure, generalised convictions about the social world, or values. However, in a situation where social psychology simply no longer studies behaviours (and if it does, those psychologists are shut out of the best journals), it is time to sound the alarm. Social psychology must have room for not only explorations of what, how, and why people think, but also what, why, and how people act. Robert Cialdini was right: We have to break up!

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