

Beyond a Dream: The Practical Foundations of Disconnected Psychology.

Dario Krpan

London School of Economics and Political Science, UK

Abstract

Disconnected psychology is a form of psychological science in which researchers ground their work upon the main principles of psychological method but are detached from a “field” consisting of other psychologists that comprises *connected* psychology. It has previously been proposed that combining the two forms of psychology would result in the most significant advancement of psychological knowledge (Krpan, 2020). However, disconnected psychology may seem to be an “abstract utopia”, given that it has not been previously detailed how to put it into practice. The present article therefore sets the practical foundations of disconnected psychology. In this regard, I first describe a hypothetical disconnected psychologist and discuss relevant methodological and epistemological implications. I then propose how this variant of psychology could be integrated with the current academic system (i.e., with connected psychology). Overall, the present article transforms disconnected psychology from a hazy dream into substance that could eventually maximize psychological knowledge, even if implementing it would require a radical transformation of psychological science.

Keywords: Knowledge, Ethics, Method, Research, Meta-psychology.

Introduction

In the previous article (Krpan, 2020), it has been argued that current academic psychology, which is referred to as *connected* because it requires “connecting various research findings and ideas generated by different scholars” (p. 1), limits the potential of the discipline to advance knowledge about human mind and behavior. As a solution, it has been proposed to establish *disconnected* psychology in which “researchers develop their ideas by following the main principles of psychological method, but they are disconnected from a “field” consisting of other psychologists and therefore do not follow the discipline’s norms and conventions” (Krpan, 2020, p. 1). The author has argued that combining these two streams of psychology would maximize the potential of the discipline concerning the understanding of human mind and behavior. The main aim of the present article is to articulate in detail how disconnected psychology could operate in practice and further

discuss its methodological and epistemological implications. In this regard, I first sketch a hypothetical picture of a disconnected psychologist and outline potential practices that would constitute this variant of psychology. I then propose how disconnected psychology could be integrated with the current academic system (i.e., with connected psychology). More specifically, I discuss university education of disconnected psychologists, outline criteria that academic departments could use when hiring disconnected psychologists, examine their role within the departments, and suggest how they would publish their work. I also explore issues that funding bodies should consider when deciding how to allocate funding to disconnected psychologists.

Who Is A Disconnected Psychologist?

The key principle of disconnected psychology is that researchers need to follow the main tenets of psychological method: observability and nonaccidentality (Feyn-

man, 1998; Krpan, 2020; Popper, 1959, 1963; Rosnow and Rosenthal, 1989; Shrout and Rodgers, 2018). In other words, whenever they develop ideas or theories regarding the occurrence of psychological phenomena (i.e., mental states or behaviors), researchers need to strive to find a way to measure these phenomena and demonstrate that the ideas or theories reflect the physical reality and are not just imagination or chance. It is necessary to clarify what this means in the context of disconnected psychology. Disconnected psychologists are not trained in methodological tools that connected psychologists typically use to satisfy these principles of psychological method, such as experimental design, regression analysis, grounded theory, etc. Therefore, to demonstrate observability and nonaccidentality of their ideas and theories, they are expected to develop their own tools and procedures to extend the diversity of psychological method. Disconnected psychologists are, however, trained in subjects that provide them with the skills to do so, such as mathematics, programming, philosophy, and art. This approach to training will be further discussed in the next section where I propose how to incorporate disconnected psychology into academic education and research.

Emphasis on method when developing ideas and theories does not mean that disconnected psychologists would need to limit themselves in any way and be discouraged from working on large-scale ideas or highly ambitious theories. They would simply need to be critical and strive to convincingly argue and/or demonstrate, in any possible way they can think of, that their ideas reflect the observable world and are not fiction. If it is not possible for them to test an idea or theory at present due to its large scale, resource limitations, or for some other reasons, it would be sufficient that they propose how it could be tested and use any other available evidence, observations, or logical arguments to defend it, but also to identify any of its potential limitations. Applying psychological method in the realm of disconnected psychology would be more challenging than in connected psychology and require a lot of creativity because researchers would need to develop their own approaches and/or build devices that would allow them to convincingly argue about observability and nonaccidentality of their ideas. However, as in connected psychology, where a “perfect” method does not exist and arguing about the validity and appropriateness of the methods employed to defend one’s claims is an integral part of the discipline (e.g., Benjamin et al., 2017; Held and Ott, 2018; Koch, 1981; Loftus, 1996; Rosnow and Rosenthal, 1989; Trafimow, 2014), the “burden of proof” to justify one’s ideas and theories would be on the researcher.

In addition to not being educated about the methodological tools developed in the realm of connected psychology, disconnected psychologists would be encouraged to avoid reading articles or books published within this form of psychology and might therefore have little awareness of developments in connected psychology. Although this practice may seem extreme, the main aim of disconnected psychologists is to develop a unique understanding of human mind and behavior that may be shaped by a range of different influences, from their immediate life circumstances to the “infinite” diversity of the world. Being exposed to ideas from connected psychology, especially in the early stages of their career when they are still developing their unique vision and style, may be detrimental to this objective for several reasons. First, it could influence them to adopt certain writing conventions from connected psychology that may, on an implicit level, shape how they construe psychological phenomena, reason about them, and form theories (Budge and Katz, 1995; Madigan et al., 1995). Second, it may influence them to internalize unwritten rules, values, and assumptions of connected psychology that have evolved throughout the course of the field’s development and, even if not easy to identify or pinpoint, shape how psychologists approach and conceptualize topics they study (Budge and Katz, 1995; Maul et al., 2016; Roediger, 2003; Sternberg, 2017; Teo, 2009). Therefore, to avoid the possibility of simply copying trends and modes of thought that have evolved in connected psychology, disconnected psychologist would be encouraged to investigate the world’s intellectual, cultural, and creative diversity instead of following the work of connected psychologists.

In this context, it may appear odd to propose that disconnected psychologists should not be exposed to ideas from connected psychology so they could develop a unique understanding of human mind and behavior, but they should be trained in disciplines such as mathematics, programming, or philosophy. After all, each of these disciplines is “connected” (e.g., philosophers are aware of and build upon each other’s work) and could influence them to adopt its conventions and doctrines when developing theories about human mind and behavior. Given these considerations, an ideal scenario would be that each disconnected psychologist develops their own systems of philosophy, math, art, etc. from first principles and then uses them to build their theories and methods in psychology. Whereas this would be possible if human life lasted a few millennia, or if completely disconnected societies evolved on different exoplanets, it is highly implausible in practice. Therefore, an optimal approach to increase the diversity of psychological theories and methodological approaches,

which can ultimately increase psychological knowledge (Krpan, 2020), is to provide individuals with a rich palette of ideas and inspirations from various intellectual disciplines and domains of life, and allow them to connect these ideas and inspirations in their own way, while eliminating influences from connected psychology that would shape these connections through its norms and conventions (see Krpan, 2020; Stanford, 2015). It is true that these disciplines (e.g., philosophy, math, art) also have their norms and conventions. However, because disconnected psychologists would be subjected to a broad range of disciplines as part of their education but would not operate within those disciplines as part of their career (see section “Integrating Disconnected Psychology with the Academic System”), the detrimental influence of their norms and conventions would be attenuated. It is important to emphasize these are my views on how to maximize theoretical richness; I am not claiming it is the only way.¹ Perhaps in the future psychologists will be able to use computer simulations to develop disconnected theories while they themselves will not need to practice disconnection.

It could be argued that, without being aware of what is happening in connected psychology, disconnected psychologists would not progress beyond *folk psychology*; that is, beyond naïve understanding of mental states and behaviors (Bering, 2006; Fletcher, 1995; Goldman, 1993). However, I argue that this would not be the case for several reasons. First, all disconnected psychologists would have a strong training in philosophy and would therefore critically approach their values, intuitions, inferences, and observations. Second, disconnected psychologists would systematically document their observations, ideas, and theories across their lifetime and build upon them, which over time should allow them to move beyond naïve intuitions and develop comprehensive and multilayered models of psychological phenomena. Finally, constant emphasis on psychological method would necessitate that disconnected psychologists overcome their initial mental models of the world and develop an understanding of human mind and behavior that is beyond imagination and superstition.

An additional argument supports the notion that disconnected psychologists can advance psychological knowledge to a greater degree if they are unaware of developments in connected psychology. Any possible scientific method that can be used to put someone’s theories about human mind and behavior to the test relies on auxiliary assumptions (Trafimow, 2009). That is, theories are made of ideas and concepts that are not directly observable, and testing them using some scientific method therefore requires developing a set of

assumptions that need to be met to connect the ideas and concepts to the observable environment (Trafimow, 2009, 2012, 2021). For example, Ajzen’s (1988) theory of planned behavior posits that perceived behavioral control (i.e., whether people perceive they have control over their behavior) predicts behavioral intention, which in turn predicts behavior. However, perceived behavioral control is not directly observable, and testing the theory hence relies on various possible auxiliary assumptions, such as that this control can be assessed by asking people to report to what extent they feel in control over their behavior (Trafimow, 2009). It has been argued that one of the problems that impede psychological knowledge is that psychologists often have been insufficiently creative with auxiliary assumptions, and they therefore either fail to effectively test existing theories or to propose theories that would require original auxiliary assumptions (Trafimow, 2009, 2012, 2021). It is plausible that one of the reasons behind this problem is that the thinking of connected psychologists may be too embedded in the existing norms and paradigms, which prevents them from seeing more original possibilities in this regard (Krpan, 2020; Madigan et al., 1995). Therefore, without the awareness of these norms and paradigms, disconnected psychologists might be freer to generate completely different auxiliary assumptions, which could in turn improve theory testing and lead to better theories.

Apart from striving to apply psychological method to their ideas and theories, and avoiding reading scholarly texts from connected psychology, disconnected psychologists would have complete freedom to choose a) what they want to study; b) how they want to study it; and c) how to document and convey their ideas. Concerning their choice of what to study, it is possible that some disconnected psychologists would focus on a specific topic, such as food consumption, prejudice, pro-environmental behavior, or anything else they find in-

¹Interestingly, one of the reviewers of this article (Wes Bonifay) has proposed the idea of superconnected psychology, in which psychologists would be “encouraged to investigate the world’s intellectual, cultural, and creative diversity”, but “in addition” to following the work of connected psychologists, rather than “instead”. In a nutshell, this means that psychologists would receive a training similar to what I propose in the section “Education of a Disconnected Psychologist”, but they would remain part of psychology as a field. Whereas I am skeptical of connected psychology because I think that its incentive structures, norms, and conventions prevent fully exploring the space of possible theories and methods, I do agree that superconnected psychology could perhaps loosen norms and conventions and allow for a greater diversity of thinking, which would advance psychological knowledge compared to the current state of the field.

teresting and important. However, given the freedom of choice that is not determined by norms and conditions of the field, it is possible that many of them would choose a more holistic approach and study a large number of different topics in relation to each other to get a more complete understanding of human mind and behavior (e.g., Choi et al., 2007). Because psychological phenomena and the environment in which they occur are complex systems, which means that these phenomena are interconnected and dependent on a variety of occurrences in the world, understanding specific subjects such as prejudice may also require understanding many other subjects such as culture, sleep, food consumption, humor, perception of physical space, etc. even if they may not seem obviously related (Bar-Yam, 1997; Eidelson, 1997; Morowitz, 2018; Sawyer, 2005). Science has in fact been criticized for overemphasizing specialization both because many phenomena it studies can be understood only in a limited way when isolated from the richness of the world in which they occur, and because specialization tends to degrade researchers themselves by making them unidimensional and less able to apply their knowledge (e.g., Moghaddam, 1989, 1997; Popper, 1959; Sabine, 1917). Therefore, by allowing researchers to approach their topics holistically and study what they desire, disconnected psychology might address this criticism of science more generally and academic psychology more specifically.

It is also possible that disconnected psychologists would be more likely to focus on studying big questions that are shaped by their direct existential experiences, such as how to overcome suffering, how to achieve one's full creative and spiritual potential, how to design a society that would be grounded in psychological principles that can prevent the occurrence of global issues such as violence or inequality, etc. Humans have had a long tradition of attempting to answer such questions, which is documented in works of various thinkers from different historical periods (e.g., Rahula, 1974; Plato, 2007), including psychologists (e.g., Frankl, 1959; Freud, 1962; Jung, 1968; Maslow, 1965; Skinner, 1948). However, investigating these questions, especially with a methodological rigor that was not required of earlier thinkers, would be highly difficult in the realm of current psychology for various reasons. Most importantly, getting tenure, which is dependent on publications (which would not be the case in disconnected psychology, as discussed in the next section), favors focusing on hot topics, narrow topics, or topics where there are many gaps in the literature because this makes it easier for one to publish more and get cited (Anseel et al., 2004; Csiszar et al., 2020; De Rond and Miller, 2005; Moher et al., 2018; Nosek et al., 2012; Paulus et al., 2015;

Safer and Tang, 2009).

Concerning how disconnected psychologists would tackle and study the topics on which they want to focus, the complete freedom of choice would likely result in a wide range of different approaches. Some of the researchers might, like connected psychologists, observe other people, test them, or measure their behavior, and over time develop unique methodological ways that would be aligned with these endeavors.² However, given the tendency for self-observation present in many humans (Fenigstein, 2009; Fenigstein et al., 1975), it is possible that many disconnected psychologists would also choose the self as the subject and focus on introspection—i.e., the examination of their own internal states. Introspection has been used as a tool for gaining knowledge by various thinkers throughout history, from Buddha (Stanley, 2012) through philosophers such as Husserl (Gutland, 2018) or Emerson (1982) to writers such as Huxley (1954). Moreover, an entire intellectual movement highly influential in the 19th century—Romanticism—was grounded upon introspection (Holbrook, 1997). Although early psychologists such as William James used introspection as a research tool (Stanley, 2012), it gradually fell out of favor with psychologists, starting with behaviorism, because it was criticized for being inadequate to provide an unbiased window into the functioning of human mind necessary to establish psychology as a science (Boring, 1953; Pronin, 2009). This is, however, paradoxical, given that psychology is one of the rare scientific disciplines where researchers have a direct experience of the phenomena being studied (unlike in physics for example where researchers cannot directly experience what it is like to be

²Although in the present article and Krpan (2020) I argue that disconnected psychology would generate novel methodologies, it is possible that many researchers would simply reinvent the wheel and come up with tools and techniques similar to what already exists, especially given that in today's world it is extremely difficult to be fully disconnected, and that disconnected psychologists would be exposed to topics in mathematics such as probability (see section "Education of a Disconnected Psychologist") that influenced statistical approaches in psychology. In a nutshell, I claim that disconnected psychology would result in novel methods because it would remove various obstacles (e.g., rules, norms, conventions) that prevent scholars from fully exploring the space of possible theories and methods, and because they would systematically document these "unconstrained" explorations across their lifetime and build upon them, which might result in a unique intellectual formation. If disconnected psychology were to be implemented but resulted in similar theories and methods as connected psychology, it would mean that connected psychology already generates an optimal number of diverse ideas, and disconnected psychology is not needed.

an atom) and should hence capitalize on this.

The potential of introspection in psychology therefore remains untapped, and disconnected psychologists could potentially push its boundaries. Unlike early sages or later intellectuals who used introspection to gain knowledge, they would be required to make this tool more rigorous given the emphasis of disconnected psychology on method, but they would also have at disposal various technological tools of self-quantification that have become available in the recent era (Maltseva and Lutz, 2018; Swan, 2012, 2013) and can be used to measure various behaviors or physiological states in many creative ways. Because introspection implies using observations about oneself in the context of one's surroundings and circumstances to gradually develop general principles about human mind and behavior, it is likely that many disconnected psychologists would employ an inductive approach to theory building (Locke and Latham, 2005). Although several philosophers have criticized this approach, most famously Popper (1963), psychologist Locke (2007) argued that the opposite, deductive approach, may retard the progress of psychological science because it encourages premature theorizing and often leads to formulating predictions after the fact. Many influential theories in psychology, such as Beck's cognitive theory of depression (Clark and Beck, 1999) or Bandura's (1986) social cognitive theory, and in science more generally, such as Newton's (1687) theory of gravity, were in fact based on induction (Locke, 2007).

Disconnected psychologists would have the freedom to document their ideas and research using any shape or form of expression for two reasons: because this could further improve the diversity of thought and increase intrinsic motivation. These forms of expression may involve texts of any length, from short to very long, and any styles that suit the researchers, from essays to diaries, novels, poems, or anything else that naturally emerges throughout the course of their careers. It is expected that allowing researchers to choose or develop their own form of expression may increase intrinsic motivation because of giving them greater autonomy (Ryan and Deci, 2000). There are several reasons why diverse forms of expression may enhance the diversity of thought. For example, each form of writing corresponds to a different schema of how information and relationships among them are organized (Rumelhart, 1980). A typical psychology article is organized into introduction, method, results, and discussion (Madigan et al., 1995) and therefore corresponds to a specific way of mentally construing a topic. Because any theory is in its essence a way of organizing information and relationships among them (Deutsch, 1966), it is possible that different forms of writing that allow different ways of

construing a topic may by default prompt different theories about this topic. Another reason why diverse forms of expression may increase the diversity of thought is that these forms differ in their "temporal horizon" of completion. For example, researchers expressing themselves in shorter forms may expect to finish them in several months or a year, whereas those expressing themselves in longer forms may expect to finish them in several years to decades. Different temporal horizons are in turn known to impact certain qualities of language that people use, such as abstractness (Trope and Liberman, 2010). Importantly, although disconnected psychologists would be allowed to use various forms of expression, they would be asked to write abstracts and keywords for their texts to make it easier to relate them to connected psychology, which I explain in the next section.

Finally, to paint a more lifelike portrait of a disconnected psychologist, I discuss some qualities and traits that may characterize them. Because disconnected psychology would require knowledge of various subjects that would be necessary to independently develop psychological method and enhance diversity of thought, this person would need to have a tendency to be a renaissance individual, such as Émilie du Châtelet (Zinsser, 2007) or Leonardo da Vinci (Heller, 2015). This variant of psychology would also likely attract people who have a desire to break with norms and traditions and start one's own path found in historical figures such as Diogenes the Cynic (Cutler, 2014), Buddha (Rahula, 1974), Tolstoy (Bartlett, 2013), Amelia Earhart (Rich, 2005), Ayn Rand (1963), Gandhi (1997), Ida B. Wells (2020), or Nikola Tesla (Valentinuzzi et al., 2016). In addition, disconnected psychology may involve working more individually and outside of large organizations or societies and may thus suit people similar to Franz Kafka (Deleuze and Guattari, 1986), Emily Dickinson (Dickinson and Ward, 1986), or Ferdinand Cheval, a French postman who spent thirty-three years of his life building *Le Palais Idéal* on his own (Manley and Sloan, 1997). Of course, this does not imply that disconnected psychologists would not collaborate with individuals from many diverse fields outside of psychology and from their personal life. Finally, because disconnected psychology would require researchers to be highly skeptical when evaluating the arguments regarding psychological method applied to their ideas and theories, they would likely have skeptical philosophical inclinations concerning empiricism that characterized David Hume (2003) or Immanuel Kant (1997).

In terms of personality traits, a disconnected psychologist may therefore score high on openness to experience (McCrae, 1987), psychological reactance (Hong

and Faedda, 1996), need for cognition (Cacioppo and Petty, 1982), personality intrinsic motivation (Amabile et al., 1994), the propensity to experience awe (Yaden et al., 2018), or reflection (Trapnell and Campbell, 1999), and low on affiliation group and affiliation exclusion concern as fundamental social motives (Neel et al., 2016).

Overall, although in this section I describe how I see a hypothetical disconnected psychologist, it is important that readers do not think that I intend for this description to be set in stone. I hope that disconnected psychology and its characteristics will be an ongoing debate that will account for many different viewpoints and individual differences. I next outline my ideas regarding how disconnected psychology could be incorporated into academia.

Integrating Disconnected Psychology with the Academic System

In this section, I discuss essential points regarding how disconnected psychology could exist within the current academia. These involve the university training of disconnected psychologists, how they would publish their work, how psychology departments would hire them and what their role in these departments would be, and how funding bodies would make decisions regarding the grant proposals they submit.

Education of a Disconnected Psychologist

As is common for most academic subjects (Ilieva et al., 2019; Rauhvargers, 2013; Usher et al., 2019), disconnected psychology could be studied at an undergraduate and graduate level, culminating with a doctoral degree that would be required to eventually apply for an academic position. When developing the undergraduate and graduate training that will be outlined below, I considered the following key criteria: a) that the training needs to equip students with the skills that make them highly competitive for jobs outside of academia, given that the number of academic positions is relatively low (Larson et al., 2013); b) that the training needs to provide students with the skills to develop their own psychological method; c) that the training needs to encourage diversity of thinking and open-mindedness; and d) that the training should be compatible with the current university education system.

Undergraduate subjects that would be essential for providing students with the skills to develop their own psychological method are mathematics, philosophy, and several computer science and engineering related subjects. Mathematics, with the special emphasis on probability, calculus, and algebra would ensure that students

gain a fundamental understanding of chance and develop the ability to approach their ideas regarding psychological phenomena quantitatively. Philosophy, with the emphasis on the philosophy of science, logic, epistemology, and ethics would prepare them to think critically about knowledge, to evaluate evidence and arguments, and to consider the ethical dimension of their work. Philosophy classes would ideally incorporate both Western and non-Western approaches to avoid a biased perspective. Engineering, with the special emphasis on topics linked to electrical engineering (e.g., mechatronics, engineering and applied physics, electrical engineering, quantum computing, robotics, etc.) would teach students the preliminary skills to invent and build their equipment and devices that could be used to study human behavior and collect data. Finally, through computer science, with the emphasis on programming and software engineering, students would gain the knowledge to later develop their own software for data analysis or to maximize their ability to use already available software.

Subjects that would encourage diversity of thinking and open-mindedness are art, music, history, literature, creative writing, anthropology, biology, chemistry, physics, cultural studies, etc. These are the subjects that students would not need to master beyond the introductory level, and the overall list of the subjects they would take would depend on the university's offer and their preferences. Creative writing would be mandatory throughout the entire course of undergraduate studies because it would be important that students understand and learn different writing styles so they can adopt or develop a style that suits them best to express their own disconnected psychology ideas.

Finally, students would also have a *disconnected psychology* class that would be taught by a disconnected psychologist working at the university. For the first generation of disconnected psychology students, it would need to be taught by a connected psychologist who has a strong training in quantitative and qualitative methodology and statistics or by another qualified individual (e.g., a philosopher of science and/or logic). This course would neither be graded nor have formal lectures. It would stretch across the duration of undergraduate studies and its purpose would be to allow students to start developing their disconnected psychology ideas (i.e., the ideas and theories about human mind and behavior grounded upon psychological method). The role of the disconnected psychologist would be to constantly challenge the students concerning their application of psychological method so they can improve their thinking in this regard and develop their own unique approach.

As part of the disconnected psychology course, students would also be encouraged to independently search for “outsider” thinkers and build their own inventory of such thinkers. The term *outsider thinker* has a similar meaning to the term *independent scientist*. These are individuals who are financially independent (e.g., due to having a job or another source of wealth) but are not affiliated to a university or another academic institution and independently study a topic of interest to them (Segen, 1992). For example, at the time when Albert Einstein introduced the special theory of relativity, in 1905, he was an outsider thinker because he worked at the Swiss Patent Office and independently developed his ideas without being affiliated to a university (Pais, 1982; Rynasiewicz and Renn, 2006). Some examples of contemporary outsider thinkers are John O. Campbell, who applied the Darwinian evolutionary paradigm to the understanding of the universe (Campbell, 2015, 2016), and Julian Barbour, whose main topic of interest is the relativity of time (Barbour, 2001). Investigating outsider thinkers would be important for students to understand that academic thinking about science is not the only way and get a broad overview of how science can be creatively approached from many different perspectives.

Students who would choose to write an undergraduate dissertation would write it within the disconnected psychology course, which means that the focus of the dissertation would be on developing their ideas regarding psychological phenomena and proposing a method to support these ideas. The dissertation would not have a specific format or structure; students would only be asked not to exceed a pre-determined word count, whereas they would have the freedom regarding everything else. Ideally, the dissertation would not be graded because its main purpose would be to encourage students to start formally developing their ideas in an intrinsically rewarding way rather than motivating them with extrinsic factors such as grades (Lin et al., 2003). However, if the university would require the dissertation to be graded, the main criteria would be originality of ideas regarding psychological phenomena and the rigor with which these ideas are supported by a proposed psychological method. All other subjects would be graded in line with the established criteria of a given university, and acceptance to undergraduate studies in disconnected psychology would also be determined by the university criteria.

The structure of graduate studies would be in accordance with the structure that the university in question endorses. Typically, there would be a master’s degree and a doctoral degree. The master’s and doctoral degrees would be separate in some cases, and in some

cases a student would be accepted for a doctorate but receive a master’s degree if they are unable or unwilling to complete the doctorate, depending on the model of graduate studies that the university practices (Ilieva et al., 2019; Rauhvargers, 2013; Usher et al., 2019). Students would be accepted to the master’s program based on their performance on the disconnected psychology undergraduate program. Other undergraduate degrees would also be acceptable if they contain a strong training regarding courses that are at the core of disconnected psychology because they provide students with the skills to develop their own psychological method as previously discussed (i.e., mathematics, philosophy, and several computer science and engineering related subjects). Admission would be based on grades as prescribed by the university and on a personal statement outlining the student’s interests and disconnected psychology ideas they have developed so far. For a direct admission to the PhD, students would need to have either an undergraduate or a master’s degree in disconnected psychology, given that those who start the PhD should already be in the process of developing their ideas regarding psychological phenomena grounded in psychological method. Admissions would also be dependent on grades as prescribed by the university in question, and the student would need to submit a comprehensive proposal describing the progress of their disconnected psychology thinking so far and how they are planning to develop it throughout the course of the studies. In this regard, originality, and the use of psychological method in defense of their ideas and/or theories about psychological phenomena would be the main criteria for evaluating the proposals.

Students pursuing a master’s degree in disconnected psychology would need to complete four core advanced courses within the areas of mathematics, philosophy, computer science, and engineering that would further enhance their skills to develop their own psychological method. They would also be required to select two courses aimed at encouraging the diversity of thinking from the options that would range from art, music, history, and literature all the way to biology, chemistry, or physics. The exact number of courses they would need to take would depend on the usual structure of a master’s degree at the university in question. Finally, students would be required to take a disconnected psychology course that would not involve formal lectures and would help them to continue developing their ideas grounded in psychological method in consultation with a disconnected psychologist, which would culminate in a dissertation. Similar to the undergraduate course, the dissertation would not have a specific format or structure (apart from the word-count), and the

aim would be to outline the development of their ideas so far and propose a psychological method in support of the ideas. The dissertation would need to be graded, as required by most universities, and the main criteria would be theoretical originality and rigor of the psychological method proposed to probe the theory.

Studying for a doctorate would require working on a dissertation in consultation with the supervisor—another disconnected psychologist. The supervisor would not impose any topics or methodological ideas upon the students. The role of the supervisor would be to challenge their methodology and ensure that it provides a strong argument regarding observability and nonaccidentality, and to challenge the originality of their theories regarding psychological phenomena. In consultation with the supervisor, they would also determine which courses to undertake to further develop their skills to independently develop psychological method and enhance their creativity and diversity of thinking. A doctoral dissertation would again not have any formal structure, apart from the word count, and would be a more advanced version of the master's dissertation where students would need to present theoretical ideas developed so far and propose a method justifying these ideas. They would defend their dissertation in front of a committee of several disconnected psychologists. Because a PhD student would develop their methodology from scratch, it would be necessary that they are examined by other disconnected psychologists who have been trained in skills that are necessary to thoroughly evaluate methodology and identify the potential strengths and weaknesses.

Overall, beyond providing students with the knowledge to develop psychological method and encouraging their diversity of thought, the undergraduate and graduate training I propose would equip them with the skills to be competitive for jobs outside of academia. For example, expertise in subjects such as mathematics, computer science, and engineering is highly demanded (e.g., Department for Education, 2015, 2016). In combination with various transferrable skills (Assiter, 2017; Bridges, 1993), such as problem solving, time management, analytical thinking, or written and verbal communication, and with the propensity to value diversity (Hunt et al., 2017) that the training would encourage, this expertise would make them valuable to many organizations. The proposed training would also be compatible with the current university systems in various countries (Ilieva et al., 2019; Rauhvargers, 2013; Usher et al., 2019). The undergraduate degree would operate in line with many liberal arts programs that offer courses from a range of disciplines but could also be taught at any university that offers the subjects I out-

lined (Pascarella et al., 2005). Likewise, the postgraduate degree would be compatible with any universities that teach the required subjects. Importantly, the training I suggest indicates that becoming a disconnected psychologist would be highly demanding. It would require students to be exceptionally self-disciplined and considerably stretch their intellect. The training therefore addresses a potential criticism of disconnected psychology, according to which this discipline has been developed for individuals who are too “lazy” to stay up to date with cutting edge developments in connected psychology and continue reading new articles and books. Quite to the contrary, although disconnected psychologists would not follow connected psychology or stay in touch with its literature, they would have a difficult task of mastering various skills so they can develop their own psychological method.

Disconnected Psychologist in a Psychology Department

Once a person has completed a PhD in disconnected psychology, they would become eligible to apply for the entry level academic positions (e.g., post-doc, assistant professor, lecturer) in a psychology department. The main objective of the department would be to hire a disconnected psychologist who has the highest potential of advancing psychological knowledge, which is the goal of disconnected psychology (Krupan, 2020). That is, they would need to identify a candidate whose theoretical ideas are most “disconnected”, which means that they are very different from what has so far been done in connected psychology, and whose proposed methodology in support of these ideas is of exceptional quality.

The candidate would be required to submit a piece of writing that would outline their main theoretical ideas and methodological approaches as well as describe how their thinking has progressed over time. I suggest that connected psychologists would evaluate the disconnectedness of the candidate, given that they have the knowledge of connected psychology necessary to understand what has so far been done and how different the candidate's work is. The methodological quality would ideally be evaluated by a panel of disconnected psychologists from the same or other universities, given that they would have the necessary skills to do this. However, especially at the beginning when there are no other disconnected psychologists available, this could be done by other psychologists in the department who have strong quantitative/qualitative and philosophical skills, and by members of a philosophy department who specialize in the philosophy of science and/or logic.

Based on this evaluation process, a pool of most competitive candidates would be selected. I propose that,

rather than the faculty members then deciding about the hire, the final decision should be made by “letting the chance decide” (i.e., by randomly drawing a candidate from the pool). This may seem questionable and unethical, but I argue that allowing the faculty to make the choice would actually be unethical. It is well known that luck plays a large role in scientific success, and predicting the future success of a young academic would be very difficult because the number of quality indicators (e.g., publications, grants, etc.) would be insufficient (Haslam and Koval, 2010; Hegarty and Walton, 2012; Janosov et al., 2020; Liu et al., 2018; Nosek et al., 2012; Pluchino et al., 2018; Sinatra et al., 2016). This gets even more difficult for an entry-level disconnected psychologist given the absence of the quality indicators (e.g., disconnected psychologists do not publish in journals, as will be outlined in the next section). The choice that the faculty would make may therefore be highly uncertain and driven by arbitrary heuristics and biases (Kahneman et al., 2001). In such a circumstance, it is fairer toward the candidates to let the chance decide. It would be advisable to bypass the random choice only when the faculty can make a convincing argument, beyond any reasonable doubt, that the candidate has already made an exceptional contribution to psychological knowledge or is highly likely to do so. Hiring of more senior academic positions (e.g., associate professors, senior lecturers, professors) would not need to rely on chance because these individuals would not be hired based mostly on their potential to advance psychological knowledge but based on how much they have advanced it so far. The hiring process I have described applies to the early stage of disconnected psychology when factors that can predict the success of these psychologists are still unknown. It is possible that in the future, when more data are available, a more systematic and statistically grounded process will be possible.

One could argue that, if disconnected psychologists are hired based on their advancement of psychological knowledge (e.g., the degree of disconnectedness), they would in fact start following connected psychology and constantly compare their ideas against the work of connected psychologists. However, they should be disincentivized to do so simply because this approach would be more likely to result in their work being more “connected”. For example, as I have discussed in the first section when describing a “typical” disconnected psychologist, such practices would make them more likely to adopt the writing conventions as well as unwritten rules, values, and assumptions of connected psychology (e.g., Budge and Katz, 1995; Madigan et al., 1995; Maul et al., 2016; Roediger, 2003; Sternberg, 2017; Teo, 2009) that would shape their thinking and con-

sequentially make their work more similar. Instead of constantly comparing their work to the work of connected psychologists, statistically speaking their highest probability of developing a unique view of psychological phenomena that would contribute to psychological knowledge would be by being influenced by the immense number of life circumstances and continuously advancing their previous ideas in interaction with their environment (see Krpan, 2020).

A disconnected psychologist would have several roles within the department. First, as I already discussed in the previous section on education, they would direct the disconnected psychology course where they would not teach about their ideas but instead supervise undergraduate and master’s disconnected psychology students. They would also serve as supervisors of disconnected psychology PhD students. In addition, they would teach a course on “disconnected psychology for connected psychologists” (for undergraduate and master’s students) where they would lecture about the methodological approach at the core of disconnected psychology and about their own ideas. They would also oversee the hiring of other disconnected psychology faculty members, either at their own university or at other universities. Whereas disconnected psychologists would be active contributors to their departments, they would be discouraged from collaborating with connected psychologists so they can continue developing their own “disconnected” agenda.

Publishing Disconnected Psychology

Given that publishing in disconnected psychology would be decoupled from hiring and career progression, it would have two main purposes: to allow connecting the work of disconnected psychologists with connected psychology in order to increase psychological knowledge (see Krpan, 2020), and to communicate researchers’ ideas to the public. Beyond these main goals, the following considerations discussed by other thinkers (e.g., Anseel et al., 2004; Csizsar et al., 2020; De Rond and Miller, 2005; Green, 2017; Nosek and Bar-Anan, 2012; Nosek et al., 2012; Paulus et al., 2015; Tjebkink et al., 2014; Watson, 2019) would be incorporated into the publishing structure: a) researchers should be more intrinsically motivated to work on their publications; for example, by finding fulfillment in their ideas and advancement of psychological knowledge rather than being driven by metrics such as impact factor and journal reputation; b) researchers should be given greater autonomy in deciding what to publish; c) frequent publishing should be disincentivized to avoid knowledge pollution (i.e. a large number of publications of low quality that make incremental or no contribution);

d) peer review process should be public; and e) peer review process should involve crowdsourcing, which means that other scientists and members of the public are continuously allowed to comment on the article and the researcher may continuously improve their ideas in interaction with them.

In line with these objectives, the publishing process would operate as follows. All articles would be published on one platform, and there would be no individual journals. Current examples of such platforms are public repositories such as arXiv (Nosek and Bar-Anan, 2012). Several blockchain-based publishing repositories have also recently been proposed (e.g., Leible et al., 2019; Stojmenova Duh et al., 2019). A disconnected psychologist would upload their publication to the platform, which would count as publishing, and this is when the ongoing public peer review process would start. Any researchers or members of the public would be welcome to comment on the publication, and the researcher would be invited to address the comments, and to indicate whether they made any changes in the publication in relation to the comments.

However, it would be expected that another disconnected psychologist would undertake a comprehensive review of the publication to identify and challenge its most important limitations, to which the author would be expected to respond and change the manuscript accordingly. The publishing platform would have an in-built motivational system that would encourage disconnected psychologists to both review others' work and to avoid publishing excessively. It would be expected that, for one piece of work published, a disconnected psychologist would need to review another publication of similar length. An algorithm would be created that would give recommendations to the researcher regarding which publication to review. Researchers who do not review another publication for a certain amount of time after they have published their own work would earn badges of dishonor which would be visible to everyone, and which would indicate to others not to review any current or future publications they produce. Also, the algorithm would stop recommending their publication to other disconnected psychologists for a review.

I expect this system to create an effective peer-review culture because it would target reputation and reciprocity as important motivators for scientists and human beings more generally (Nosek and Bar-Anan, 2012; Nowak and Sigmund, 1998; Roughgarden, 2010), but also because researchers who would not review other's work would not have a comprehensive in-depth review of their own work and would therefore less easily convince others to take their work seriously. Importantly,

because a researcher would need to review another publication for each manuscript they publish, they would likely be disincentivized from publishing too much because this would lead to doing many reviews, and as a result they would have less time to focus on their ideas.

Although readers could potentially rate the publications, and a rating-based quality indicator could therefore be developed (e.g., likes or stars), I would discourage this type of quality indicators. It is well-known that, in the current publishing system, many researchers consistently try to game the metrics, which can lead to questionable research practices and motivate researchers to write publications with the aim to achieve a certain rating rather than to generate knowledge (e.g., Csizsar et al., 2020; Nosek and Bar-Anan, 2012; Nosek et al., 2012; Paulus et al., 2015). This should be avoided in disconnected psychology because publications should not be produced for ratings, but to advance knowledge.

Overall, disconnected psychologists would have a complete freedom regarding the shape, form, and length of the publication. They would only be required to write a 1–2-page summary of the publication, and to write 5–10 keywords that correspond to psychological phenomena covered in the publication. As previously discussed (Krpan, 2020), connected psychologists would be in charge of browsing disconnected psychology publications so they can continuously test them in combination with theories, methodologies, and approaches from connected psychology and determine the ones that best explain psychological phenomena of interest, thus advancing knowledge. Abstracts and keywords would enable currently available algorithms (e.g., Extance, 2018; Tshitoyan et al., 2019) to automatically explore disconnected psychology literature and link it to relevant connected psychology publications covering similar phenomena.

Disconnected Psychology Research Funding

The final important step of integrating disconnected psychology with academia is discussing how research within this domain could be funded beyond the research allowances that departments or institutions typically give to their staff members. Because funding bodies usually have their own objectives, policies, and funding criteria, here I do not propose specific guidelines that everyone could apply, but I simply discuss main issues that these institutions may want to consider.

Similar to the hiring decisions I have discussed, the main objective of the funding bodies should be to finance proposals that have the highest potential of advancing psychological knowledge, which is the goal of disconnected psychology (Krpan, 2020). In other words, they should identify proposals that outline theo-

ries drastically different from what has been done so far and devise methodology of exceptional quality in support of these theories. Whereas a pool of high-quality proposals could be selected in each funding round based on reviews by a committee of connected and disconnected psychologists, I am skeptical that “human” decisions about which proposals to eventually fund would maximize knowledge production in the long run. Various research has shown that reviewers evaluating grant applications typically have very low agreements (e.g., Pier et al., 2018). Moreover, research has uncovered that larger grants do not necessarily lead to more significant discoveries and proposed that targeting diversity rather than excellence would likely maximize the efficiency of funding and advance science to a greater degree (Fortin and Currie, 2013). Finally, Pluchino et al. (2018) used agent-based modelling to show that the most effective strategy for public funding of research to maximize innovation would be to distribute equal amounts of capital (even if small) across different applicants. This is because funding strategies that award few selected individuals based on their previous achievements in combination with the funding proposal typically neglect the role of randomness in determining success. Based on these considerations, I suggest that funding should be equally distributed among all disconnected psychology proposals that pass the quality bar in each funding round, or that funding should be randomly allocated to several proposals that pass the quality bar.

Disconnected psychologists would also, however, be highly competitive to fund their research in different creative ways. For example, because in the absence of traditional academic confines they would be more likely to tackle big questions that trouble all human beings, as I have discussed, it is possible that their research would be appealing to the public and therefore more suitable for crowdfunding (Vachelard et al., 2016).

Conclusion

Overall, in this article I outlined my ideas on how disconnected psychology could practically function and be incorporated into academia. It is important to emphasize that this article describes one possible vision of disconnected psychology—the one that is aligned with the current academic and educational system—whereas other more radical visions that would completely overthrow the current academic and educational structure are also possible. I decided to focus on this more “traditional” version of disconnected psychology because it is likely more “practical” (i.e., easier to implement) than the more radical variant. However, even this more practical version would require a massive sea change and

therefore necessitate a radical transformation of psychology as a field. The article should therefore not be seen as proposing a set of rules and practices that “must” characterize disconnected psychology. My main aim was to paint disconnected psychology as a concrete practice rather than an “abstract utopia” (see Bloch, 1986; Levitas, 1990) to foster discussions about how it could be implemented and operate. The eventual shape and organization of the discipline should eventually be determined by continuous interactions among many individuals with diverse viewpoints and backgrounds who are interested in advancing psychological knowledge. Even if in this article I discuss the more practical version of disconnected psychology, I want to emphasize that my favorite version would be a most radical version imaginable.

Author Contact

Dario Krpan, ORCID: 0000-0002-3420-4672

Department of Psychological and Behavioural Science, London School of Economics and Political Science, London WC2A 2AE, UK

E-Mail: D.Krpan@lse.ac.uk

Conflict of Interest and Funding

The author declares that there is no conflict of interest. The author received no specific funding for this article.

Author Contributions

Conceptualization: Dario Krpan. Writing - Original Draft Preparation: Dario Krpan. Writing - Review and Editing: Dario Krpan.

Open Science Practices

This article is theoretical and as such received no Open Science badges. The entire editorial process, including the open reviews, is published in the online supplement.

References

- Ajzen, I. (1988). *Attitudes, personality, and behavior*. Dorsey.
- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The work preference inventory: Assessing intrinsic and extrinsic motivational orientations. *Journal of Personality and Social Psychology*, 66(5), 950–967. <https://doi.org/10.1037//0022-3514.66.5.950>

- Anseel, F., Duyck, W., De Baene, W., & Brysbaert, M. (2004). Journal impact factors and self-citations: Implications for psychology journals. *American Psychologist*, 59(1), 49–51. <https://doi.org/10.1037/0003-066x.59.1.49>
- Assiter, A. (2017). *Transferable skills in higher education*. Routledge.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- Barbour, J. (2001). *The end of time: The next revolution in physics*. Oxford University Press.
- Bartlett, R. (2013). *Tolstoy: A russian life*. Profile Books.
- Bar-Yam, Y. (1997). *Dynamics of complex systems*. Perseus.
- Benjamin, D. J., Berger, J. O., Johannesson, M., Nosek, B. A., Wagenmakers, E.-J., Berk, R., Bollen, K. A., Brembs, B., Brown, L., Camerer, C., & et al. (2017). Redefine statistical significance. *Nature Human Behaviour*, 2(1), 6–10. <https://doi.org/10.1038/s41562-017-0189-z>
- Bering, J. M. (2006). The folk psychology of souls. *Behavioral and Brain Sciences*, 29(5), 453–462. <https://doi.org/10.1017/s0140525x06009101>
- Bloch, E. (1986). *The principle of hope*. MIT Press.
- Boring, E. G. (1953). A history of introspection. *Psychological Bulletin*, 50(3), 169–189. <https://doi.org/10.1037/h0090793>
- Bridges, D. (1993). Transferable skills: A philosophical perspective. *Studies in Higher Education*, 18(1), 43–51. <https://doi.org/10.1080/03075079312331382448>
- Budge, G. S., & Katz, B. (1995). Constructing psychological knowledge. *Theory and Psychology*, 5(2), 217–231. <https://doi.org/10.1177/0959354395052003>
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42(1), 116–131. <https://doi.org/10.1037/0022-3514.42.1.116>
- Campbell, J. O. (2015). *Darwin does physics*. CreateSpace Independent Publishing Platform.
- Campbell, J. O. (2016). Universal darwinism as a process of bayesian inference. *Frontiers in Systems Neuroscience*, 10. <https://doi.org/10.3389/fnsys.2016.00049>
- Choi, I., Koo, M., & Choi, J. A. (2007). Individual differences in analytic versus holistic thinking. *Personality and Social Psychology Bulletin*, 33(5), 691–705. <https://doi.org/10.1177/0146167206298568>
- Clark, D. A., & Beck, A. T. (1999). *Scientific foundations of cognitive theory and therapy of depression*. John Wiley.
- Csiszar, A., Gingras, Y., Power, M., Wouters, P., Griese-mer, J. R., Kehm, B. M., & et al. (2020). *Gaming the metrics: Misconduct and manipulation in academic research*. MIT Press.
- Cutler, I. (2014). *Cynicism from Diogenes to Dilbert*. McFarland; Company.
- De Rond, M., & Miller, A. N. (2005). Publish or perish. *Journal of Management Inquiry*, 14(4), 321–329. <https://doi.org/10.1177/1056492605276850>
- Deleuze, G., & Guattari, F. (1986). *Kafka: Toward a minor literature*. University of Minnesota Press.
- Department for Education. (2015). *Employment and earnings outcomes of higher education graduates: Experimental statistics using the Longitudinal Education Outcomes (LEO) data: Further breakdowns*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/573831/SFR60_2016_LEO_main_text_v1.1.pdf
- Department for Education. (2016). *Graduate outcomes (LEO): Employment and earnings outcomes of higher education graduates by subject studied and graduate characteristics in 2016/17*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790223/Main_text.pdf
- Deutsch, K. W. (1966). On theories, taxonomies, and models as communication codes for organizing information. *Behavioral Science*, 11(1), 1–17. <https://doi.org/10.1002/bs.3830110102>
- Dickinson, E., & Ward, T. V. W. (1986). *The letters of emily dickinson*. Harvard University Press.
- Eidelson, R. J. (1997). Complex adaptive systems in the behavioral and social sciences. *Review of General Psychology*, 1(1), 42–71. <https://doi.org/10.1037/1089-2680.1.1.42>
- Emerson, R. W. (1982). *Nature and selected essays*. Penguin Books.
- Extance, A. (2018). How AI technology can tame the scientific literature. *Nature*, 561(7722), 273–274. <https://doi.org/10.1038/d41586-018-06617-5>
- Fenigstein, A. (2009). Private and public self-consciousness. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 495–511). Guilford Press.
- Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, 43(4), 522–527. <https://doi.org/10.1037/h0076760>

- Feynman, R. P. (1998). Cargo cult science. *The Art and Science of Analog Circuit Design*, 55–61. <https://doi.org/10.1016/b978-075067062-3/50008-x>
- Fletcher, G. J. O. (1995). *The scientific credibility of folk psychology*. Erlbaum.
- Fortin, J.-M., & Currie, D. J. (2013). Big science vs. little science: How scientific impact scales with funding. *PLoS ONE*, 8(6). <https://doi.org/10.1371/journal.pone.0065263>
- Frankl, V. E. (1959). *Man's search for meaning*. Beacon Press.
- Freud, S. (1962). *Civilization and its discontents*. W.W. Norton.
- Gandhi, M. K. (1997). *Hind swaraj and other writings*. Cambridge University Press.
- Goldman, A. I. (1993). The psychology of folk psychology. *Behavioral and Brain Sciences*, 16(1), 15–28. <https://doi.org/10.1017/s0140525x00028648>
- Green, C. D. (2017). Publish and perish: Psychology's most prolific authors are not always the ones we remember. *The American Journal of Psychology*, 130(1), 105–119. <https://doi.org/10.5406/amerjpsyc.130.1.0105>
- Gutland, C. (2018). Husserlian phenomenology as a kind of introspection. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.00896>
- Haslam, N., & Koval, P. (2010). Predicting long-term citation impact of articles in social and personality psychology. *Psychological Reports*, 106(3), 891–900. <https://doi.org/10.2466/pr0.106.3.891-900>
- Hegarty, P., & Walton, Z. (2012). The consequences of predicting scientific impact in psychology using journal impact factors. *Perspectives on Psychological Science*, 7(1), 72–78. <https://doi.org/10.1177/1745691611429356>
- Held, L., & Ott, M. (2018). On p-values and bayes factors. *Annual Review of Statistics and Its Application*, 5(1), 393–419. <https://doi.org/10.1146/annurev-statistics-031017-100307>
- Heller, A. (2015). *Renaissance man*. Routledge.
- Holbrook, M. B. (1997). Romanticism, introspection, and the roots of experiential consumption: Morris the epicurean. *Consumption Markets and Culture*, 1(2), 97–163. <https://doi.org/10.1080/10253866.1997.9670295>
- Hong, S.-M., & Faedda, S. (1996). Refinement of the hong psychological reactance scale. *Educational and Psychological Measurement*, 56(1), 173–182. <https://doi.org/10.1177/0013164496056001014>
- Hume, D. (2003). *A treatise of human nature*. Dover.
- Hunt, V., Prince, S., Dixon-Fyle, S., & Yee, L. (2017). *Delivering through diversity*. McKinsey; Company. https://www.mckinsey.com/~media/mckinsey/business%20functions/people%20and%20organizational%20performance/our%20insights/delivering%20through%20diversity/delivering-through-diversity_full-report.pdf
- Huxley, A. (1954). *The doors of perception and heaven and hell*. Harper; Row.
- Ilieva, J., Killingley, P., Tsiligiris, V., & Usher, A. (2019). *The shape of global higher education: International comparisons with europe*. British Council. https://www.britishcouncil.org/sites/default/files/k006_02_the_shape_of_global_higher_education_in_europe_final_v5_web.pdf
- Janosov, M., Battiston, F., & Sinatra, R. (2020). Success and luck in creative careers. *EPJ Data Science*, 9(1). <https://doi.org/10.1140/epjds/s13688-020-00227-w>
- Jung, C. (1968). *The archetypes and the collective unconscious (2nd ed.)* Bollingen.
- Kahneman, D., Slovic, P., & Tversky, A. (2001). *Judgment under uncertainty: Heuristics and biases*. Cambridge University Press.
- Kant, I. (1997). *Prolegomena to any future metaphysics*. Cambridge University Press.
- Koch, S. (1981). The nature and limits of psychological knowledge: Lessons of a century qua "science." *American Psychologist*, 36(3), 257–269. <https://doi.org/10.1037/0003-066x.36.3.257>
- Krpan, D. (2020). Unburdening the shoulders of giants: A quest for disconnected academic psychology. *Perspectives on Psychological Science*, 15(4), 1042–1053. <https://doi.org/10.1177/1745691620904775>
- Larson, R. C., Ghaffarzadegan, N., & Xue, Y. (2013). Too many phd graduates or too few academic job openings: The basic reproductive number in academia. *Systems Research and Behavioral Science*, 31(6), 745–750. <https://doi.org/10.1002/sres.2210>
- Leible, S., Schlager, S., Schubotz, M., & Gipp, B. (2019). A review on blockchain technology and blockchain projects fostering open science. *Frontiers in Blockchain*, 2. <https://doi.org/10.3389/fbloc.2019.00016>
- Levitass, R. (1990). Educated hope: Ernst Bloch on abstract and concrete utopia. *Utopian Studies*, 1(2), 13–26. <https://doi.org/www.jstor.org/stable/i20718993>
- Lin, Y.-G., McKeachie, W. J., & Kim, Y. C. (2003). College student intrinsic and/or extrinsic motiva-

- tion and learning. *Learning and Individual Differences*, 13(3), 251–258. [https://doi.org/10.1016/s1041-6080\(02\)00092-4](https://doi.org/10.1016/s1041-6080(02)00092-4)
- Liu, L., Wang, Y., Sinatra, R., Giles, C. L., Song, C., & Wang, D. (2018). Hot streaks in artistic, cultural, and scientific careers. *Nature*, 559(7714), 396–399. <https://doi.org/10.1038/s41586-018-0315-8>
- Locke, E. A., & Latham, G. P. (2005). Goal setting theory: Theory building by induction. In K. G. Smith & M. Hitt (Eds.), *Great minds in management: The process of theory development* (pp. 128–150). Oxford University Press.
- Locke, E. A. (2007). The case for inductive theory building. *Journal of Management*, 33(6), 867–890. <https://doi.org/10.1177/0149206307307636>
- Loftus, G. R. (1996). Psychology will be a much better science when we change the way we analyze data. *Current Directions in Psychological Science*, 5(6), 161–171. <https://doi.org/10.1111/1467-8721.ep11512376>
- Madigan, R., Johnson, S., & Linton, P. (1995). The language of psychology: Apa style as epistemology. *American Psychologist*, 50(6), 428–436. <https://doi.org/10.1037/0003-066x.50.6.428>
- Maltseva, K., & Lutz, C. (2018). A quantum of self: A study of self-quantification and self-disclosure. *Computers in Human Behavior*, 81, 102–114. <https://doi.org/10.1016/j.chb.2017.12.006>
- Manley, R., & Sloan, M. (1997). *Self-made worlds: Visionary folk art environments*. Aperture.
- Maslow, A. H. (1965). *Eupsychian management*. Richard D. Irwin.
- Maul, A., Torres Irribarra, D., & Wilson, M. (2016). On the philosophical foundations of psychological measurement. *Measurement*, 79, 311–320. <https://doi.org/10.1016/j.measurement.2015.11.001>
- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, 52(6), 1258–1265. <https://doi.org/10.1037/0022-3514.52.6.1258>
- Moghaddam, F. M. (1989). Specialization and despecialization in psychology: Divergent processes in the three worlds. *International Journal of Psychology*, 24(1-5), 103–116. <https://doi.org/10.1080/00207594.1989.10600036>
- Moghaddam, F. M. (1997). *The specialized society: The plight of the individual in an age of individualism*. Praeger.
- Moher, D., Naudet, F., Cristea, I. A., Miedema, F., Ioannidis, J. P., & Goodman, S. N. (2018). Assessing scientists for hiring, promotion, and tenure. *PLOS Biology*, 16(3). <https://doi.org/10.1371/journal.pbio.2004089>
- Morowitz, H. J. (2018). *The mind, the brain and complex adaptive systems*. Routledge.
- Neel, R., Kenrick, D. T., White, A. E., & Neuberg, S. L. (2016). Individual differences in fundamental social motives. *Journal of Personality and Social Psychology*, 110(6), 887–907. <https://doi.org/10.1037/pspp0000068>
- Newton, I. (1687). *Philosophiæ naturalis principia mathematica*. The Royal Society.
- Nosek, B. A., & Bar-Anan, Y. (2012). Scientific utopia: I. opening scientific communication. *Psychological Inquiry*, 23(3), 217–243. <https://doi.org/10.1080/1047840x.2012.692215>
- Nosek, B. A., Spies, J. R., & Motyl, M. (2012). Scientific utopia: II. restructuring incentives and practices to promote truth over publishability. *Perspectives on Psychological Science*, 7(6), 615–631. <https://doi.org/10.1177/1745691612459058>
- Nowak, M. A., & Sigmund, K. (1998). Evolution of indirect reciprocity by image scoring. *Nature*, 393(6685), 573–577. <https://doi.org/10.1038/31225>
- Pais, A. (1982). *‘Subtle is the Lord...’: The science and the life of Albert Einstein*. Oxford University Press.
- Pascarella, E. T., Wolniak, G. C., Seifer, T. A., Cruce, T. M., & Blai, C. F. (2005). Liberal arts colleges and liberal arts education: New evidence on impacts. *ASHE Higher Education Report*, 31(3), 1–148. <https://doi.org/10.1002/aehe.3103>
- Paulus, F. M., Rademacher, L., Schäfer, T. A., Müller-Pinzler, L., & Krach, S. (2015). Journal impact factor shapes scientists’ reward signal in the prospect of publication. *PLOS ONE*, 10(11). <https://doi.org/10.1371/journal.pone.0142537>
- Pier, E. L., Brauer, M., Filut, A., Kaatz, A., Raclaw, J., Nathan, M. J., Ford, C. E., & Carnes, M. (2018). Low agreement among reviewers evaluating the same nih grant applications. *Proceedings of the National Academy of Sciences*, 115(12), 2952–2957. <https://doi.org/10.1073/pnas.1714379115>
- Plato. (2007). *The republic*. Penguin Classics.
- Pluchino, A., Biondo, A. E., & Rapisarda, A. (2018). Talent versus luck: The role of randomness in success and failure. *Advances in Complex Sys-*

- tems, 21(03n04), 1850014. <https://doi.org/10.1142/s0219525918500145>
- Popper, K. R. (1959). *The logic of scientific discovery*. Hutchinson.
- Popper, K. R. (1963). *Conjectures and refutations: The growth of scientific knowledge*. Routledge.
- Pronin, E. (2009). The introspection illusion. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (vol. 41) (pp. 1–67). Academic Press.
- Rahula, W. S. (1974). *What the Buddha taught*. Grove Press.
- Rand, A. (1963). *For the new intellectual: The philosophy of Ayn Rand*. Penguin.
- Rauhvargers, A. (2013). *Global university rankings and their impact: Report ii. brussels*. European University Association. <https://eua.eu/downloads/publications/global%20university%20rankings%20and%20their%20impact%20-%20report%20ii.pdf>
- Rich, D. L. (2005). *Amelia earhart: A biography*. Smithsonian Books.
- Roediger, H. L. (2003). Focus on academia: The complete academic. <https://www.psychologicalscience.org/observer/focus-on-academia-the-compleat-academic>
- Rosnow, R. L., & Rosenthal, R. (1989). Statistical procedures and the justification of knowledge in psychological science. *American Psychologist*, 44(10), 1276–1284. <https://doi.org/10.1037/0003-066x.44.10.1276>
- Roughgarden, T. (2010). Algorithmic game theory. *Communications of the ACM*, 53(7), 78–86. <https://doi.org/10.1145/1785414.1785439>
- Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), *Theoretical issues in reading comprehension* (pp. 33–58). Erlbaum.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066x.55.1.68>
- Rynasiewicz, R., & Renn, J. (2006). The turning point for einstein's annus mirabilis. *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics*, 37(1), 5–35. <https://doi.org/10.1016/j.shpsb.2005.12.002>
- Sabine, G. H. (1917). Philosophical and scientific specialization. *The Philosophical Review*, 26(1), 16–27.
- Safer, M. A., & Tang, R. (2009). The psychology of referencing in psychology journal articles. *Perspectives on Psychological Science*, 4(1), 51–53. <https://doi.org/10.1111/j.1745-6924.2009.01104.x>
- Sawyer, R. (2005). *Social emergence: Societies as complex systems*. Cambridge University Press.
- Segen, J. C. (1992). *The dictionary of modern medicine*. Parthenon Publishing Group.
- Shrout, P. E., & Rodgers, J. L. (2018). Psychology, science, and knowledge construction: Broadening perspectives from the replication crisis. *Annual Review of Psychology*, 69(1), 487–510. <https://doi.org/10.1146/annurev-psych-122216-011845>
- Sinatra, R., Wang, D., Deville, P., Song, C., & Barabási, A.-L. (2016). Quantifying the evolution of individual scientific impact. *Science*, 354(6312). <https://doi.org/10.1126/science.aaf5239>
- Skinner, B. (1948). *Walden two*. Prentice Hall.
- Stanford, P. K. (2015). Unconceived alternatives and conservatism in science: The impact of professionalization, peer-review, and big science. *Synthese*, 196(10), 3915–3932. <https://doi.org/10.1007/s11229-015-0856-4>
- Stanley, S. (2012). Intimate distances: William james' introspection, buddhist mindfulness, and experiential inquiry. *New Ideas in Psychology*, 30(2), 201–211. <https://doi.org/10.1016/j.newideapsych.2011.10.001>
- Sternberg, R. J. (2017). *Psychology 101 1/2: The unspoken rules for success in academia*. American Psychological Association.
- Stojmenova Duh, E., Duh, A., Droftina, U., Kos, T., Duh, U., Simonič Korošak, T., & Korošak, D. (2019). Publish-and-flourish: Using blockchain platform to enable cooperative scholarly communication. *Publications*, 7(2), 33. <https://doi.org/10.3390/publications7020033>
- Swan, M. (2012). Sensor mania! the internet of things, wearable computing, objective metrics, and the quantified self 2.0. *Journal of Sensor and Actuator Networks*, 1(3), 217–253. <https://doi.org/10.3390/jsan1030217>
- Swan, M. (2013). The quantified self: Fundamental disruption in big data science and biological discovery. *Big Data*, 1(2), 85–99. <https://doi.org/10.1089/big.2012.0002>
- Teo, T. (2009). Philosophical concerns in critical psychology. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), *Critical psychology: An introduction* (2nd ed.) (pp. 36–54). Sage.

- Tijdink, J. K., Verbeke, R., & Smulders, Y. M. (2014). Publication pressure and scientific misconduct in medical scientists. *Journal of Empirical Research on Human Research Ethics*, 9(5), 64–71. <https://doi.org/10.1177/1556264614552421>
- Trafimow, D. (2009). The theory of reasoned action. *Theory and Psychology*, 19(4), 501–518. <https://doi.org/10.1177/0959354309336319>
- Trafimow, D. (2012). The role of auxiliary assumptions for the validity of manipulations and measures. *Theory and Psychology*, 22(4), 486–498. <https://doi.org/10.1177/0959354311429996>
- Trafimow, D. (2014). Considering quantitative and qualitative issues together. *Qualitative Research in Psychology*, 11(1), 15–24. <https://doi.org/10.1080/14780887.2012.743202>
- Trafimow, D. (2021). A taxonomy of major premises and implications for falsification and verification. *International Studies in the Philosophy of Science*, 33(4), 211–229. <https://doi.org/10.1080/02698595.2021.1964845>
- Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. *Journal of Personality and Social Psychology*, 76(2), 284–304. <https://doi.org/10.1037/0022-3514.76.2.284>
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117(2), 440–463. <https://doi.org/10.1037/a0018963>
- Tshitoyan, V., Dagdelen, J., Weston, L., Dunn, A., Rong, Z., Kononova, O., Persson, K. A., Ceder, G., & Jain, A. (2019). Unsupervised word embeddings capture latent knowledge from materials science literature. *Nature*, 571(7763), 95–98. <https://doi.org/10.1038/s41586-019-1335-8>
- Usher, A., Ilieva, J., Killingley, P., & Tsiligiris, V. (2019). *The shape of global higher education: The americas*. British Council. https://www.britishcouncil.org/sites/default/files/k006_03_the_shape_of_global_higher_education_americas_final_web.pdf
- Vachelard, J., Gambarra-Soares, T., Augustini, G., Riul, P., & Maracaja-Coutinho, V. (2016). A guide to scientific crowdfunding. *PLOS Biology*, 14(2). <https://doi.org/10.1371/journal.pbio.1002373>
- Valentinuzzi, M. E., Ortiz, M. H., Cervantes, D., & Leder, R. S. (2016). Nikola tesla: Why was he so much resisted and forgotten? [retrospectroscope]. *IEEE Pulse*, 7(6), 61–68. <https://doi.org/10.1109/mpul.2016.2606472>
- Watson, R. (2019). Predatory journals and the pollution of academic publishing. *Journal of Nursing Management*, 27(2), 223–224. <https://doi.org/10.1111/jonm.12739>
- Wells, I. B. (2020). *Crusade for justice: The autobiography of Ida B. Wells*. University of Chicago Press.
- Yaden, D. B., Kaufman, S. B., Hyde, E., Chirico, A., Gaggioli, A., Zhang, J. W., & Keltner, D. (2018). The development of the awe experience scale (awe-s): A multifactorial measure for a complex emotion. *The Journal of Positive Psychology*, 14(4), 474–488. <https://doi.org/10.1080/17439760.2018.1484940>
- Zinsser, J. P. (2007). *Emilie du Châtelet: Daring genius of the enlightenment*. Penguin.