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Financial Conflicts of Interest in School Psychology: A Continuing Problem

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Abstract

School psychology contributes to the science of human behavior and utilizes this science to inform an evidence-based practice. The usefulness of this science is dependent on scientists making good faith efforts to minimize bias in their research. Nonetheless, implicit biases can still influence scientists' decisions and, hence, the outcomes of their investigations. One source of such bias comes from conflicts of interest (COIs). In this article we discuss COIs within the context of science, with a particular focus on financial COIs. In addition, we discuss how financial COIs can arise in school psychology as well as some ways the COIs may influence psychological science. We conclude by discussing how financial COIs are typically handled and some suggestions for handling them in the future.

Keywords: Conflicts of Interest; Professional Issues in School Psychology; Ethics

Financial Conflicts of Interest in School Psychology: A Continuing Problem

Progress in scientific disciplines (e.g., school psychology) requires objectively investigating the natural world (Leng & Leng, 2020).[1] That is, "aspire to knowledge that bears no trace of the knower" (Daston & Galison, 2007, p. 17). While perfect objectivity is unobtainable, scientists can engage in practices that minimize or otherwise account for their biases (National Research Council, 2002).

Despite scientists' good faith efforts at minimizing bias in their work, they can still engage in questionable research practices that may alter what they conclude from their investigations (Fanelli, 2009; John, Loewenstein, & Prelec, 2012). Although scientists engage in such practices for a variety of reasons, many of the reasons involve some form of conflict of interest (COI; Sah, 2017). Since the practice of school psychology involves utilizing psychological science to inform evidence-based practice (American Psychological Association Division 16, 1998; National Association of School Psychologists, 2020), it follows that *all* school psychologists should have a firm grasp of how of COIs can potentially influence psychological science (Dombrowski, McGill, Farmer, Kranzler, & Canivez, 2021). Thus, in this article we will discuss the COI concept and its potential influence within science in order to assist school psychologists in understanding how COIs may affect their own practice.

The Conflict of Interest Concept

There is not a single definition of a COI because it covers a broad spectrum of situations (e.g., business, legal, government, treatment, research). There is substantial overlap across most definitions, however, which indicates they are likely referring to a common concept. We take a COI to mean there is a risk that a person's judgment in a particular situation regarding a primary interest will be unduly influenced by a loyalty to a secondary interest (Friedman, 1992; Institute of Medicine, 2009).[2] There is a lot to unpack in this concept.

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[1] We employ the *natural world* concept broadly to include physical objects and phenomena as well as social and mental phenomena that are observable and amenable to empirical investigation.

[2] For convenience, we discuss COI involving particular persons, but they can just as easily involve groups of persons who are making decisions collectively (e.g., universities, professional organizations, companies).

First, a person does not need to exercise unduly-influenced judgement (i.e., bias) for a COI to exist. Instead, there only needs to be a risk of exercising such judgment. In this context, we can think of *risk* as reasonable probability of occurrence (Davis, 1982). That is, a fair-minded third-party would believe the secondary interests are sufficient for potentially influencing judgment regarding the primary interest. Since a COI only involves the risk of bias, it makes the concept of a *potential COI* meaningless (McCoy & Emanuel, 2017). It reflects a mistaken view that COIs only exist when someone exercises biased judgment, which confuses potential situations with real situations marked by the potential for bias.

Second, since a COI only involves the risk of exercising unduly-influenced judgment, COIs are neither bad/incorrect nor good/correct (Steneck, 2007). That is, the COI concept is more descriptive than normative (i.e., deriving from a standard or norm). Nonetheless, COIs are usually discussed within the context of ethics (Barnett & Campbell, 2012; Jacob, Decker, Lugg, & Diamond, 2022). This is because a COIs can only exist when (a) a person is in a role entrusted with authority to make decisions for the benefit of some other entity (i.e., the primary interest); (b) there is a reasonable probability a secondary interest could influence the authority's decision; and (c) a biased decision would result in harm to the primary interest. Thus, not managing COIs appropriately can result in an erosion of trust in the authority's judgement (Fineberg, 2017).

Third, a COI is neither an attribute of people nor a feature of situations. Instead, it results from particular people having loyalties to competing interests within a particular situation. This makes the COI concept overlap with the dual relationship concept (Cohen-Filipic, 2014). Psychologists have a *dual relationship* in a particular situation whenever they are in a professional role with a client and simultaneously either in another role with the same client (e.g., teacher, proprietor) or in a relationship with a person related to or closely associated with the client (Jacob et al., 2022). The major distinction between a COI and a dual relationship is breadth of applicability. Dual relationships are constrained to conflicts in relationships with other people that result from professionals having multiple roles in a particular situation, but the loyalty conflicts in COIs are not entirely constrained to professional roles. For both COIs and dual relationships, person or situation changes can make an existing conflict disappear or a conflict can appear that was previously absent

Fourth, the primary and secondary interests in a COI tend to come from different sources. Secondary interests can be nearly anything. Usually, they are not in and of themselves illegitimate, and may even be desirable or necessary (e.g., Bero & Grundy, 2016). The interest

becomes troublesome due to its relative influence on making judgements concerning the primary interest (Thompson, 1993). Primary interests are determined by the duties that result from taking a particular professional role (Fisher, 2021). Vey broadly, psychologists can take three professional roles: practitioner, teacher/supervisor, or scientist. In the practitioner role the primarily interest is welfare of clients, while the primarily interest in the teacher/supervisor role is education or mentoring of students. In the scientist role, the primary interest is the integrity of the scientific enterprise (Greenwald, 2009; Koocher & Page, 2021).

The three roles of a psychologist are not mutually exclusive, and it is not uncommon to inhabit multiple roles concurrently (e.g., scientist-practitioner). Nonetheless, one role tends to supersede the others in a particular situation. For the remainder of the article, we will focus on COIs in which the superseding professional role is scientist. Before we can discuss scientific COIs, however, we first need to discuss the meaning of the scientific enterprise.

Scientific Enterprise

Science is a cumulative body of organized knowledge about the natural world. While the *scientific enterprise* is centered around science, it is more than just accumulated knowledge. It is a social institution comprised of people called *scientists* who agree learn about the natural world through sciencing (Anderson, 1976). *Sciencing* is the systematic application of a particular set of rules (i.e., methods) to discover facts and justify knowledge claims. Thus, the scientific enterprise not only involves research (i.e., systematic investigations), but also determining, teaching, and enforcing rules for sciencing.

Although it is convenient to discuss the scientific enterprise as being a single social institution, it is really multiple institutions that are divided into disciplines and sub-disciplines (e.g., branches, orientations). The (sub)disciplines are differentiated by both their particular content (i.e., particular knowledge focus) and rules for sciencing. What we call the scientific enterprise exists in the intersection among these disciplinary divisions.

By consensus, the scientific enterprise is conservative when it comes to knowledge (Merton, 1968). While scientists can make whatever knowledge claims they want, new claims will usually be rejected by the larger scientific community unless the claim's support (e.g., data, logic) meets certain criteria. One major criterion is passing peer review. The peer-review process is imperfect, however, as even the most meticulous reviewers can overlook things that deserve more scrutiny (Schwartz & Zamboanga, 2009). Thus, in addition to peer review, knowledge

claim support needs to be reproducible and replicable by independent scientists (National Academies of Sciences, Engineering, and Medicine, 2019).[3]

Meeting the peer review, reproducibility, and replicability criteria is necessary for acceptance of knowledge claims, but is seldom sufficient. This is because it does not preclude other scientists from being skeptical and doubting the claims. Reasonable doubt is typically welcomed more than eschewed in scientific disciplines (Allison, Pavela, & Oransky, 2018). In fact, major progress in a discipline is driven by scientists with contesting knowledge claims engaging in sciencing until a consensus is reached and the number of critics begins to diminish (Krimsky, 2019).[4]

The conservative nature of the scientific enterprise may appear pedantic, but it, at least in part, has given scientific disciplines a prioritized status when it comes to knowledge claims about the natural world (Ziman, 2000). Holding everything else constant, claims based on sciencing are given precedence over knowledge claims based on other forms of support (e.g., anecdote, common sense). Likewise, scientists are viewed as experts, so their claims in their domains of expertise are given precedence over the claims of novices.

The prioritized status of scientific disciplines is relatively new (Brown, 1986). Prior to the 17th century, sciencing was a largely a hobby among some social elite. Although scientists' knowledge claims were often respected, they did not take precedence over those made by political or religious leaders. As scientists were able to show that science was useful for solving natural-world problems, the public-at-large gradually began to increase its trust in scientific disciplines to deliver accurate information about the natural world. Among other things, they trust that (a) sciencing involves good faith efforts to be as objective and transparent (i.e., public) as possible; (b) knowledge claims with troublesome support are eventually filtered out; and (c) scientists communicate information truthfully (Reiss & Sprenger, 2020).

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[3] *Reproducibility* means obtaining consistent results from the same data and data analysis techniques. *Replicability* means obtaining consistent results across different investigations aimed at answering the same questions using new data or new data analysis techniques.

[4] The skepticism we discuss in the text is markedly different from cynicism. *Skepticism* involves having reasonable doubt due to perceiving a knowledge claim's definitions, logic, or empirical evidence not meeting some agreed-upon standards (Kurtz, 2010). By contrast, *cynicism* involves having an unreasonable doubt that manifests as either requiring knowledge claims meet some unobtainable criteria, or a priori dismissing knowledge claim as being incorrect. Skepticism is agreeable with sciencing because in aids in producing dependable knowledge, but cynicism is antithetical to knowledge production so is antithetical to sciencing (Lilienfeld et al., 2012).

The public-at-large's trust in scientific disciplines is fragile and highly susceptible to erosion—something has become increasingly apparent in the social media era (All European Academies, 2019; Leng & Leng, 2020). Multiple phenomena contribute to such erosion. Some exist outside of scientific disciplines (e.g., social climate, desire for political power). While it is possible to implement strategies for mitigating the erosion from these phenomena, the strategies' effectiveness depends on people operating outside of the discipline (e.g., science reporters, societal leaders). Other phenomena contributing to the erosion exist within scientific disciplines, which implies that scientists can have a stronger influence on mitigating the phenomena's influence. One such internal phenomenon is mismanaging scientific COIs (Truscott, Baumgart, & Rogers, 2004; Wilkes, 2000).

Scientific Conflicts of Interest

A *scientific COI* (SCOI) is a class of COIs that have in common the primary interest being the integrity of a scientific enterprise (National Academy of Sciences, National Academy of Engineering, & Institute of Medicine, 2009). Thus, a SCOI exists when there is a risk of a person in the role of a scientist making biased judgement concerning some aspect of a scientific enterprise due to secondary interest loyalty. We can group the various secondary interests as being either financial or non-financial.[5] The two classes are not mutually exclusive, so it is possible for a secondary interest to have both financial and non-financial components.

Financial interests are those in which scientists, their families, or close associates can potentially either have a pecuniary gain or avoid a pecuniary loss (Responsibility of Applicants, 2011; World Bank, Organisation for Economic Cooperation and Development, & United Nations Office on Drugs and Crime, 2020). *Non-financial* interests are those that do not involve pecuniary gains or losses. Terms defined with negative statements are notoriously vague, and non-financial interests is no exception. There are many ways for something to not to be pecuniary, so non-financial interests can include anything ranging from career advancement to social network allegiance to professional relationships with organizations (e.g., governmental agencies, advocacy associations) to academic rivalries (Grundy, et al., 2020; Marcovitch, et al., 2009). Although few scientists would deny the existence of non-financial interests, the

[5] Financial and non-financial interests can be part of any COI, not just those involving scientific investigations.

vagueness of the concept makes them extremely difficult to capture (PLoS Medicine Editors, 2008). Thus, we focus solely on SCOIs in which the secondary interest is financial.

Financial interests are not inherently wrong, and the United States has laws allowing scientists to benefit financially from their work (Steneck, 2007). Nonetheless, there are two troublesome features of SCOIs involving financial interests (FCOIs). First, they are not inherent to sciencing because scientists can make significant knowledge contributions without having financial interests in their work. Thus, it is often not immediately obvious to a third-party whether a FCOI exists (Bekelman, Li, & Gross, 2003). As such, if financial interests are not explicitly disclosed, then they often go unrecognized.

Second, sciencing that has a FCOI is prone to produce outcomes that favor the financial interests (Krimsky, 2012; Lundh, Lexchin, Mintzes, Schroll, & Bero, 2017). This relation exists in aggregate (i.e., across multiple projects), however, so may or may not exist for a particular project. Thus, we cannot infer that (a) a particular scientific project with a FCOI is inherently flawed; (b) scientists who have secondary financial interests will make biased decisions to favor those interests; or (c) the relation engendering the FCOI is untoward (Fineberg, 2017). Instead, the existence of a FCOI merely indicates there is a reasonable probability of biased judgments regarding some aspect of sciencing (e.g., problems studied, literature cited, methods used, data interpreted, results communicated).

Much of the work on FCOIs has been limited to a subset of scientific disciplines (e.g., climatology, medicine) whose knowledge intersects with industries that have billions in annual revenue (e.g., energy, pharmaceuticals). Many companies operating within these industries spend substantial sums of money on their products, so considerable financial stakes can be involved for scientists choosing to work with the companies (e.g., Wei, Waldman, & Armstrong, 2019). Psychology has some intersection with these industries, but it tends to be limited to a few branches and, even then, the financial stakes tend to be lower that with other scientific disciplines (Pachter, Fox, Zimbardo, & Antonuccio, 2007; Summers, 2021). This does not entail psychology is free from FCOIs. To the contrary, a given psychologist's research agenda "is not always an altruistic endeavor and is sometimes at odds with ethical research practices due to the inherent financial conflicts of interest" (Kranzler, Blake, & Van Norman, 2020, p. 262).

FCOIs in psychology tend to be somewhat different from those discussed in the FCOI literature (Bos, 2020; Gorman, 2018). Some common forms are given in Table 1. To help understand them better, we provide five vignettes involving school psychology scenarios (for

some others, see Bottema-Beutel et al., 2021a; Cristea & Ioannidis, 2018; Truscott, et al., 2004). The vignettes are loosely based on real experiences, but the details are fictional so should not be taken as representing any particular person or situation.

Vignettes Illustrating Financial Conflicts on Interests in School Psychology

1. Gladys authored a computer application (i.e., software) called Motif, whose main function is to integrate information across different psychoeducational instruments in order to help school-based assessment teams identify students with an education-related disability. A commercial publishing company sells Motif, giving Gladys 20% from all sales. Gladys wrote an article on the topic of financial costs involved in identifying students with educational disabilities that she published in the scientific journal, *School Psychology*. She discussed Motif within the article, at one point claiming that school districts should consider purchasing it because it is useful and reasonably priced.

Rationale for a FCOI. Although articles published in scientific journals can take multiple forms, they are expected to further the progress of a scientific discipline unless explicitly marked otherwise (e.g., editorial, advertorial). Thus, in choosing to communicate in *School Psychology*, Gladys takes on the role of scientist and her primary interest is the integrity of school psychological science. At the same time, she has a financial interest in the form of making a profit from the sales of Motif. Thus, there is a reasonable probability that her loyalty to Motif's sales unduly influences her judgment about Motif.

2. Eldra created *Geistkörper*, which is a corporation that provides post-graduate training in psychophysiology and its assessment (e.g., heart rate measurement, mindfulness). School psychologists completing 30 Geistkörper courses are eligible to apply for the credential of *school psychophysiology expert* (SPE). A portion of the net profits from every course and SPE application go towards paying Eldra and two Geistkörper employees. Eldra put together a symposium at the last National Association of School Psychologists (NASP) convention on the topic of school-based psychophysiology. In it, he served as the discussant for a group of presentations on psychophysiological science, the benefits of psychophysiology assessment in schools, and the process of obtaining the SPE credential.

Rationale for a FCOI. Like scientific articles, presentations at professional conventions of scientific disciplines can take multiple forms. Unless explicitly stated otherwise, it is expected that the presentations are going to disseminate new information or discuss

established knowledge related to the discipline. Thus, in choosing to be part of a NASP symposium, Eldra takes on the role of scientist and his primary interest in the integrity of school psychological science. He also has a financial interest in Geistkörper being profitable. Thus, there is a reasonable probability his loyalty to Geistkörper unduly influences his judgment about psychophysiology assessment—especially the SPE credential.

3. Levi is the chief research director at Good Education, Inc. Good Education commercially publishes a variety of psychological instruments and technology for using the instruments (e.g., protocols). As part of Levi's duties at Good Education, he oversaw the process for revising the latest edition of the *Stubbs educational test* (SET), the SET-4. His work on the SET-4 was so integral that he is listed as a co-author of the technical manual. Levi is also an associate editor of *Psychological Assessment*, which is a scientific journal devoted to publishing research on psychological instruments. Levi recently put together a special issue of *Psychological Assessment* on the SET-4 in which school psychologists and Good Education employees worked together to write over a dozen articles about the SET, most of which were laudatory.

Rationale for a FCOI. In the role of an employee, Levi has an interest in Good Education's financial health. Since the company is in the business of selling psychological instruments, this entails Levi has an interest in Good Education's instruments being profitable. When Levi takes on the role of an editorial board member, his primary interest shifts to maintaining the integrity of psychological science. His loyalty to Good Education, however, does not go away. Thus, in overseeing the production of a special issue of *Psychological Assessment* on the SET-4, his loyalty to Good Education becomes a secondary interest. Thus, there is a reasonable probability that his judgment regarding some aspects of the special issue could be unduly influenced by his loyalty to Good Education.

4. Marvin is a faculty member in Angell University's (AU) school psychology program. He is also board certified in *GoodBx*, which is a highly-systemized behavior intervention program. Marvin's research program primarily involves investigating the efficacy of GoodBx, which he does through implementing it in his AU laboratory with young children who have significant developmental delays. Faculty at AU who demonstrate strong scholarly productivity tend to get reduced teaching loads and favorable annual

performance evaluations. To increase his research productivity, Marvin trained multiple school psychology students to implement GoodBx in his lab. The training was well received and eventually became integrated into the school psychology program's curriculum. This included at least one supervised practicum rotation in Marvin's lab. Having numerous students trained in GoodBx available every year allowed Marvin to work with a local company, FabBx4U, to provide paid assistantships to school psychology students. FabBx4U specializes in home-based behavioral interventions, so students receiving FabBx4U assistantships provide GoodBx-based interventions to children in the community.

Rationale for a FCOI. Although Marvin does not receive any money directly from FabBx4U, he still has a FCOI. In his role as a scientist studying GoodBx, his primary interest is the integrity of his research. Carrying out his research program at the level favored at AU requires continually having students who help him with his projects, so he has a secondary interest in funding school psychology students. Funding currently comes through FabBx4U, but FabBx4U can only afford to fund the students if GoodBx is effective and a profit can be made by implementing it. Consequently, there is a reasonable probability that Marvin's judgment about GoodBx is unduly influenced by his interest in funding students for his research through FabBx4U.

5. Martha is a school psychologist with expertise in academic multi-tiered system of supports (aMTSS). She owns an educational consulting company, *Cerchier*, which is her primary source of income. Through Cerchier, she consults on aMTSS with various education organizations—including the U.S. Department of Education. A few years ago, Martha authored an aMTSS writing program, *Wrītaną*, that includes online assessment and interventions for students in grades K–8. Because of her expertise, school districts and professional societies frequently ask Martha to provide trainings on "best practices" in aMTSS. In her trainings, she primarily uses data and modules from Wrītaną. In addition, everyone who attends a training gets coupon for their schools to purchase Wrītaną at a 30% discount for one academic year (i.e., $4.20/student instead of $6.00/student).

Rationale for a FCOI. In her role as a nationally-recognized expert in aMTSS, Martha has a primary interest is the scientific integrity of educational interventions. Martha also has an interest selling Wrītaną and making Cerchier financially healthy. Consequently, when

providing training on aMTSS writing interventions, there is a reasonable probability her judgment about how she discusses the interventions are unduly influenced by her interest in Cerchier's profitability.

Managing Financial Conflicts of Interest

Managing a FCOI broadly means implementing procedures to minimize the risk that financial interests will have an adverse influence on sciencing (Steneck, 2007). Before the latter part of the 20th century, scientists largely held a laissez-faire attitude about managing FCOIs. Although they were aware of how COIs could adversely play out in politics, scientists largely assumed that "the body of scientists is trained to avoid and organized to resist every form of persuasion but the fact" (Bronowski, 1956, p. 76). Some federal granting agencies and scientific journals did have FCOI management policies, but they were exceptions. Most organizations involved in scientific enterprises either ignored FCOIs altogether or left management entirely to the individual scientists. This essentially made disclosing FCOIs an opt-in process, which substantially reduces the likelihood of it occurring (van Kolfschooten, 2002).

FCOIs gained a lot of attention in the 1980s due to some high-profile cases involving scientists with substantial financial interests failing to disclose the conflicts (Krimsky, 1999). Since the mismanagement of these FCOIs posed a major threat to eroding the public-at-large's trust, some major scientific organizations began creating FCOI management policies or altering the ones in place to no longer make disclosure an opt-in process. Although the policies differ somewhat by discipline and venue (e.g., journals, conventions), most now require FCOI disclosure, with some going so far as to require that data from any original research be publicly available for independent analysis.

Some psychologists noted potential problems with FCOIs in the early 20th century (e.g., Jastrow, 1927), but psychology largely followed the laissez-faire attitude of other scientific disciplines. Since the high-profile cases in the 1980s did not involve psychologists, psychology continued the attitude throughout the century. The increasing encroachment of the pharmaceutical industry into psychiatry caused the American Psychological Association (APA) to convene a task force in 2002 to study secondary financial interests in psychology (Pachter et al., 2007). It strongly recommended that psychology follow the practices of other scientific disciplines who were implementing explicit and proactive FCOI management procedures. Some organizations subsequently changed their FCOI policies, but many continued with the laissez-

faire approach (Chivers, 2019). This has resulted in a hodgepodge of FCOI policies that differ substantially across psychology specialties and venues.

Currently, many venues for communicating psychological science have no explicit policy for managing FCOIs (Hardwicke et al., 2022). For example, NASP's *Communiqué* publishes articles with knowledge claims (e.g., research-based practice, professional practice) and is "the most widely read publication in school psychology" (Desrochers, 2022, p. 31), yet its submission guidelines do not discuss any FCOI management policy (National Association of School Psychologists, 2021a). Other venues explicitly require a declaration of conflicting financial interests, but are vague about what constitutes such interests. For example, APA journals require authors complete the *Full Disclosure of Interest* form, which states the following.

> Whether an [secondary financial] interest is "significant" *will depend on individual circumstances and cannot be defined by a dollar amount*. Holdings in a company through a mutual fund are not ordinarily sufficient to warrant disclosure, whereas salaries, research grants, consulting fees, and personal stock holdings *would be*. Being the copyright holder of and/or recipient of royalties from a psychological test *might* be another example. Participation on a board of directors or any other relationship with an entity or person that is in some way part of the paper *should also be carefully considered for possible disclosure*. (American Psychological Association, n.d., p. 1, emphasis added).

Such equivocal language results in FCOI disclosure being left to authors' discretion, which, ultimately, lets it continue being an opt-in process.

Even if every major psychology organization revised their FCOI management policies in the next week to include more explicit language, it would likely not make much difference. Psychology organizations with explicit FCOI standards seldom enforce them strictly, so typically there are little-to-no repercussions for violating the standards (Koocher & Page, 2021). For example, NASP's 2020 ethics code revision includes some explicit statements about COIs, such as "School psychologists are forthright in describing any potential conflicts of interest that may interfere with professional effectiveness" (p. 52). Despite the clear language, NASP does not strictly enforce its own COI standards very. We already mentioned that *Communiqué* has no stated COI management policy. Presumably, NASP would be stricter with its position statements since they "represent the official policy of NASP" (National Association of School Psychologists, n.d., p. 1). Some of the position statements published since the 2020 ethics code

revision do list the writing group members, but none include FCOI disclosure statements (e.g., NASP, 2021b, 2022a, 2022b). Thus, even though NASP has clear standards about FCOIs, there appears to be little enforcement within some of its own publications much less repercussions for violating the standards. Since there are minimal repercussions for failing to make disclosure FCOIs, and making such disclosures has a risk of giving consumers the wrong impression that the presented information is inherently biased, there is currently little incentive for scientists to disclose FCOIs in psychology outlets.

From one perspective, psychology's continued laissez-faire approach to managing FCOIs makes sense. While evaluating FCOI disclosures appears to be something that would fit into the peer review process, tools do not currently exist for efficient investigations of the disclosures' the veracity (e.g., software for capturing financial interest information relevant to psychologists).[6] Thus, peer reviewers, editors, or convention organizers would have to do so manually. The review process is already resource intensive, however, and growing more so annually (Aczel, Szaszi, & Holcombe, 2021). To complicate things even further, it is not uncommon for the companies with whom psychologists have financial interests to be the ones who support the journals and conventions through paid advertising (Pachter et al., 2007). This all contributes to a situation in which there are few incentives for the people involved in reviewing scientific claims process to go out of their way to investigate FCOIs.

From another perspective, the laissez-faire approach to FCOIs is at odds with psychology's professional ethics concerning COIs when the professional role is practitioner (i.e., involving clients). NASP and APA ethics codes have explicit guidelines for behavior when psychologists are in the practitioner role (American Psychological Association, 2017, Standards 3.05, 3.06; National Association of School Psychologists, 2020, Standards III.2.4, 4.1, 4.2, III.5). Both codes agree that it is optimal for psychologists to remove themselves from situations in which there is a COI and guide clients to alternative resources. The codes do not mandate removal, however, because it is not always possible. In these non-optimal situations, the codes are unequivocal that not only do psychologists need to disclose COIs to all the parties involved, but that the "burden of proof rests on the individual psychologist" to demonstrate behavior is

[6] ProPublica created a database with information about financial interests for some scientists employed by public academic institutions (Wei et al., 2019). It is no longer being updated, however, and is grossly incomplete. For example, if a company hired a psychologist employed by a university to evaluate a new instrument, but the company paid the psychologist directly, there would be no record of the financial interest in the database.

ethical (Flanagan et al., 2005, p. 436). In other words, psychologists are to be proactive in disclosing and managing COIs in order to work against even the appearance of biased judgement. Moreover, since these ethics codes provide the basis for many state laws regarding the practice of psychology, there are usually explicit repercussions for failing to be proactive in dealing with COIs.

Suggestions for Managing the FCOI Problem in Psychology

The laissez-faire approach to managing FCOIs has not only pervaded psychology since the discipline's inception, but has become part of the psychological science enterprise. As such, it has contributed to a lack of trust in psychological science both inside and outside the discipline (Cosgrove & Wheeler, 2013; Coyne, 2016). Thus, any solution to this problem will require a systemic solution (Teo, 2015). That is, it will require members of multiple psychology organizations purposefully crafting FCOI management policies and procedures they believe are both feasible to implement and effective for improving the trustworthiness of psychological science. In what follows, we provide some suggestions for such policies/procedures. While they are not solutions in and of themselves, we believe they can contribute to finding solutions.

First and foremost, there needs to be substantial discussion about what is required for consumers of psychological science to trust the information provided across different venues. There has been a noticeable increase in discussion among psychologists about the trustworthiness of psychological science over the last decade, but the discussions have largely focused on the so-called replication crisis —the lack of research reproducibility and replicability (Tackett et al., 2017; Wiggins & Chrisopherson, 2019). Conspicuous by its absence in these discussions is FCOIs (Coyne, 2016). While FCOIs are not completely absent (e.g., Gorman, 2018; Greenwald, 2009; Young, 2009), discussions are scattered and any possible links between FCOIs and reproducibility/replicability tends to be alluded to more than directly discussed (e.g., Lilienfeld, 2017; Nosek, Spies, & Motyl, 2012). As such, the discussion of FCOIs in psychology pales in comparison to the discussions within other scientific disciplines (e.g., Springer Nature, 2022; Stead, 2017).

Part of the reason for the relatively little discussion of FCOIs may come from their relation to research outcomes being a "known unknown" in psychology. To date, there has been very little systematic empirical work examining the relation between FCOIs and outcomes in psychological research. While we believe it would be highly unusual for the aggregate relation

between financial interests and research outcomes to be different in psychology than it is in other scientific disciplines, it is something open to empirical investigation. Thus, another suggestion to help in solving psychology's FCOI problem is a program of systematic empirical research on the financial interests–outcomes relation.

The major catch with this second suggestion is that adequate investigations require a level of transparency about FCOIs that currently does not exist. That is, anyone wishing to study the financial interests–outcomes relation in psychology will have to go beyond what is reported in articles, presentations, or other venues. This does not necessarily prohibit such work, but does mean it will require the skills of investigative journalism as much as it does sciencing. Consequently, a third suggestion to aid in solving the FCOI problem involves having more explicit FCOI disclosure guidelines (Cristea & Ioannidis, 2018).

We hasten to add to this third suggestion that while requiring FCOI disclosure is necessary for managing FCOIs, disclosure alone will not solve the FCOI problem. Disclosure is currently the most popular recourse for FCOIs across science venues because, in principle, it allows: (a) scientists with FCOIs to be more objective; (b) the parties possibly affected by the FCOIs to modify their opinions about the credibility of decisions accordingly; and (c) researchers to study the FCOI–outcome relation better. While the latter is true, the first two are only true in particular situations (Matheson, 2008). For example, sometimes disclosing FCOIs can increase bias for the secondary interest (Loewenstein, Sunstein, & Golman, 2014). Thus, psychologists will need to be intentional about FCOI management policies and creative in finding solutions that can supplement disclosure (e.g., Haque, Lu, Wu, Cosgrove, & Bursztajn, 2015).

Our last suggestion is more "bottom-up" than "top-down" because it involves teaching psychologists norms for making decisions regarding FCOIs. We know that self-interest tends to be immediately compelling, so we often make decisions that benefit ourselves automatically or implicitly (Moore & Loewenstein, 2004). This is why it is often very difficult for us to be aware of how self-interest biases our own judgment. It is possible to behave in ways that are inconsistent with self-interest, but doing so requires effort and deliberation—we have to choose to behave this way. One thing that can increase the likelihood of such behavior is having professional norms requiring it (Sah, 2017).

APA and NASP ethics codes already have value and behavior norms for psychologists in their professional roles (e.g., beneficence, nonmaleficence, fidelity, integrity). Since

psychologists are typically exposed to these codes as part of their formal training, it is vital that FCOIs are discussed as part of the many ethical issues that psychologists might have to confront in their career. This explicit curriculum, however, is just one part of the psychologist socialization process. In addition, there is a so-called *hidden curriculum*, which is comprised of the norms an educational institution conveys informally or tacitly (Hatcher et al., 2013). For example, a professor's off-the-cuff remarks about what it means to be a psychologist, observing the day-to-day behavior of site supervisors or psychologists in other authority positions, or institutional structures that reward certain behaviors and punish others. This hidden curriculum can be just as influential as the explicit curriculum—maybe even more so—on the attitudes, values, and behaviors that psychologists adopt. Thus, any formal FCOI management policies that psychology adopts need to be strongly supplemented with explicitly and implicitly teaching psychologists value and behavior norms regarding FCOIs as well as modeling how to determine what is appropriate across different complex situations.

Conclusion

In this article we discussed the conflict of interest (COI) concept, focusing particularly on scientific COIs involving financial interests (FCOIs). While other scientific disciplines have been wrestling with how to manage FCOIs for nearly four decades, psychology has continued to take the laissez-faire approach it adopted more than a century ago. This has resulted in vague and inconsistent FCOI management policies that often result in individual psychologists determining how they want to handle FCOIs. This is untenable. Persons financially benefiting from the sale of instruments, interventions, or other commercial products should not be the ones (school) psychologists primarily rely on determine the products' value or usefulness (Quanstrum & Hayward, 2010). Doing so can adversely affect the discovery of psychological knowledge and reduce the trust that psychologists and the public-at-large have in psychological science.

Unfortunately, until (school) psychology begins systemically addressing FOCIs, the onus of dealing with FCOIs will fall directly onto consumers. Consumers are probably safe in assuming that scientists only disclose a FCOI in their work when a FCOI exists (i.e., few false positives), but are not safe in assuming a lack of a FCOI disclosure or disclosing no FCOI entails the non-existence of a FCOI (i.e., unknown false negatives). As such, we encourage consumers to heed to the time-honored dictum of trust but verify. To aid in this, in Table 2 we provide some pertinent questions to ask regarding FCOIs when critically evaluating psychological research.

Although the tone in this article has been somewhat negative, we would like end on a more positive note. We have personally witnessed preeminent school psychologists with FCOIs choose not to take a laissez-faire attitude. Some have removed themselves from situations in which they believed their financial interests could potentially bias their scientific judgement, even though such conflicts were not apparent to anyone else. Others have been transparent about their FCOIs with all the relevant parties despite being no policies requiring such disclosure. Although removal and voluntary disclosure may not be the best solutions in every situation, we believe promoting the integrity of psychology's scientific enterprises over personal financial interests when there is a conflict is a laudable norm to which all school psychologists should all aspire.

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Table 1. Non-exhaustive List of Financial Conflicts for Psychologists.

Psychologist has a primary interest in the integrity of psychological science and:

- receives royalties from authoring commercial products (e.g., curricula, instruments, software).
- receives research support or are involved in a sponsored research project.
- consults with entity outside of employer listed on byline.[a]
- conducts training.[a]
- has previous, current, or expected employment by entity other than employer listed on byline.
- serves on an advisory board.[a]
- gives an invited address.[a]
- has expenses reimbursed by entity other than employer listed on byline.
- receives honoraria or gifts.
- has substantial equity in a company.

Adapted from material in Bos (2020) and Hardwicke et al. (2022). [a.] Activity can be done with or without financial compensation.

Table 2. Questions to help Assess the Likelihood of Financial Conflict of Interest

- Do any authors acknowledge an affiliation with a commercial enterprise related to the research topic? [a] Have any of the authors previously acknowledged an affiliation with such a commercial enterprise, or is such an affiliation listed in their curriculum vitae?
- Have the authors declared a FCOI in any previous scholarship?
- Do the authors discuss a particular commercial product (e.g., instrument, software, training program)?
    - If so, do people purchase the product through the authors or a company? If a company, are the authors associated with it in any way?
- Do the authors have a website marketing their expertise (e.g., consulting, assessment)? Do the areas of marketed expertise overlap with the content of the publication or presentation?
- Are the authors listed in any databases of corporate sponsorship?
- Do the authors have access to data that most other scientists within the discipline cannot access (e.g., scores from a psychological instrument's norming sample)?

[a.] It is not unusual to have multiple affiliations but only list one on the byline for a publication or presentation.