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Researcher Perspectives on Conflicts of Interest: A Qualitative Analysis of Views from Academia

Jensen T. Mecca, Carter Gibson, Vincent Giorgini, Kelsey E. Medeiros, Michael D. Mumford, and Shane Connelly

University of Oklahoma, 3100 Monitor, Suite 100, Norman, OK 73072, USA

Jensen T. Mecca: jensen.mecca@gmail.com

Abstract

The increasing interconnectedness of academic research and external industry has left research vulnerable to conflicts of interest. These conflicts have the potential to undermine the integrity of scientific research as well as to threaten public trust in scientific findings. The present effort sought to identify themes in the perspectives of faculty researchers regarding conflicts of interest. Think-aloud interview responses were qualitatively analyzed in an effort to provide insights with regard to appropriate ways to address the threat of conflicts of interest in research. Themes in participant responses included disclosure of conflicts of interest, self-removal from situations where conflict exists, accommodation of conflict, denial of the existence of conflict, and recognition of complexity of situations involving conflicts of interest. Moral disengagement operations are suggested to explain the appearance of each identified theme. In addition, suggestions for best practices regarding addressing conflicts of interest given these themes in faculty perspectives are provided.

Keywords

Bias; Conflicts of interest; Ethical decision making; Moral disengagement

Introduction

In 1998, Dr. Andrew Wakefield and his colleagues published an article linking the measles, mumps, and rubella (MMR) vaccine to autism (Godlee et al. 2011). All cases reported in the article were subject to misrepresentation or undisclosed alteration, leading to the eventual retraction of the article in 2010 (Godlee et al. 2011). Despite this retraction, the article's publication catalyzed a chain reaction leading to a worldwide vaccine scare (Deer 2011) that continues to rage today. In fact, as recently as 2013, Britain experienced serious outbreaks of measles thought to be a consequence of failure to vaccinate infants in the aftermath of the article's publication (The New York Times 2013).

Further investigation with regard to the reasons for the consistent falsification of results evident in the Wakefield piece revealed that the principal investigator was involved in a

lawsuit centering on the MMR vaccine, involvement for which he had received payment—a clear and undisclosed conflict of interest (Deer 2011). In addition to a sharp decline in vaccinations of infants and resulting international health concerns, Wakefield's misconduct has led to widespread mistrust of medicine and of medical research. While this case serves as an extreme example of the negative ramifications of conflicts of interest in research, even lesser infractions may be extremely damaging to the scientific community with regard to public trust.

The increasing interconnectedness of research and industry has led to a rise in the potential for conflicts of interest in research like the one evident in the Wakefield scandal. According to a 2000 report by Boyd and Bero, about \$1.5 billion flows from industry to academic institutions annually; it is likely that this figure is even larger today. Additionally, at least one fourth of investigators in biomedical research have industry affiliations, and a significant relationship exists between industry sponsorship in this area and pro-industry conclusions (Bekelman et al. 2003). Similarly, according to Lexchin, Bero, Djulbegovic, and Clark (2003), studies sponsored by pharmaceutical companies were much more likely to have outcomes favoring the sponsor than were studies with a different sponsor. Given the prevalence of the potential for conflicts of interest in research across industries due to external sponsorship, as well as the evidence that these conflicts do, in fact, shift research findings in favor of industry sponsors, it is increasingly evident that conflicts of interest pose a severe threat to the credibility of research.

Cohen (2001) defines a conflict of interest as existing “whenever an individual or an institution has a primary allegiance that requires certain actions, and simultaneously, has a secondary interest that (1) could abrogate that primary allegiance and (2) is sufficiently tempting to raise a reasonable possibility that it might actually do so.” Such conflicts are of concern due to the possibility that inappropriate factors may influence research at any stage—from research design to data analysis to the presentation of results (Bird and Spier 2008). Although they are frequently related to the involvement of industry in research, conflicts of interest may spring from any situation in which the expectations of others may influence research, be those others collaborators, competitors, investors, or the public at large (Bird and Spier 2008).

Given the likely influence of conflicts of interest on the work of academic researchers as indicated by the extensive financial investment of industry sponsors, alongside the expectations of the individuals and groups mentioned above, it is of particular importance that we understand the views of individuals conducting research in an academic context with regard to the appropriate ways in which to deal with these conflicts. According to previous research, the most commonly used strategy among academic researchers for addressing conflicts of interest is simply to disclose the conflict (Boyd and Bero 2007). This is also the most preferred strategy among institutions responsible for the management of conflicts of interest, with other common tactics including close oversight or management of research by institutions or banning of ties with industry entirely (Glaser and Bero 2005). In a meta-analysis of studies examining the beliefs of researchers regarding the appropriateness and impact of industry financial ties, as well as the disclosure of those ties, Glaser and Bero (2005) found that the majority of researchers believed that these relationships could

influence findings in the interest of corporate sponsors but that disclosing conflicts of interest would effectively eliminate bias. The authors interpret this finding as illustrating a degree of naiveté among investigators about the mechanisms by which financial incentives operate to induce bias in research.

Krimsky (2005) explains the emphasis on disclosure in terms of what he calls the funding effect, where the presence of funding affects scientific outcomes. As public concern regarding this phenomenon has increased, the public has increasingly turned to disclosure as a way to assess the integrity of scientific research (Krimsky 2005). Krimsky (2005) concludes from a judicial standpoint that disclosure of conflicts fails to provide an adequate solution to conflicts of interest in science as this topic pertains to the provision of expert testimony. Given this conclusion, it is doubtful that disclosure alone may prove an adequate solution to the problem of the funding effect.

In fact, arguments made by former *New England Journal of Medicine* editor Marcia Angell (2000) suggest that recusal may be a far more appropriate approach to addressing conflicts of interest than mere disclosure. Angell (2000) suggests that the close ties between, in particular, academic medicine and industry are so close that the goals of medicine cannot help but be influenced by those of industry. Although financial relationships of this nature are not so blatantly influential as to be considered bribes, they cannot help but influence the types of research conducted by medical scientists and the way in which results are reported. Angell (2008) goes so far as to suggest that clinical trials of prescription drugs be administered by an impartial group within the National Institutes of Health, rather than by investor-owned companies, implying that conflicts of interest in this area are too great to be overcome, even with disclosure.

It seems likely given these statements and findings that researchers in academia have misconceptions regarding the threats that conflicts of interest pose to their research, as well as the appropriate ways to address these threats. The present effort seeks to research a greater understanding of the perspectives on conflicts of interest possessed by researchers in an academic context, with the hope of providing recommendations for best practices for managing conflicts of interest. This leads to our first research question:

Research Question 1: What themes appear in the ways in which research professionals view conflicts of interest?

In addition, given the potentially negative ramifications of conflicts of interest, it may be of use to identify the mechanisms most likely used by researchers in order to justify the perpetuation of these conflicts. Bandura's (1999) description of moral disengagement serves as a potential explanation for such behavior given the fact that the disengagement practices described serve to prevent the activation of self-regulatory mechanisms governing moral conduct. In this instance, the activation of these mechanisms would lead researchers to engage in behaviors intended to prevent the influence of conflicts of interest; moral disengagement mechanisms would allow researchers to justify not engaging in such behaviors.

Specifically, Bandura (1999) identifies seven moral disengagement mechanisms. The first of these, moral justification, involves the portrayal of unethical conduct as serving socially worthy or moral purposes. Second, euphemistic labeling involves the use of language to verbally sanction behavior. When engaging in advantageous comparison, a third mechanism, individuals contrast behavior with worse offenses executed by others. Displacement of responsibility occurs when individuals view their actions as flowing from the orders of an authority figure. Similarly, diffusion of responsibility involves sharing blame with a group and therefore diminishing it. Disregard for or distortion of consequences, a sixth mechanism, involves minimizing or ignoring the harm of immoral actions. Finally, dehumanization involves stripping victims of detrimental acts of their human qualities. While these mechanisms may help to explain the justification of conflicts of interest among researchers, it is unclear which, if any, serve as primary explanatory factors for this behavior. This leads to our second research question:

Research Question 2: Do any of the themes identified in researcher perspectives on conflicts of interest reflect moral disengagement operations?

Methods

In order to investigate these questions, we conducted a number of interviews with researchers in an academic setting regarding their responses to a measure intended to assess ethical decision making. Interviews were then transcribed and then qualitatively analyzed in order to identify themes surrounding conflicts of interest.

Sample

The faculty sample included 64 researchers at a large southwestern university, 37 of whom were male and 27 of whom were female. The sample included assistant professors (15), associate professors (28), full professors (20), and one adjunct professor. Participants were drawn from six broad areas of study, including six from biological sciences, such as botany and chemistry; seven from physical sciences, such as engineering and meteorology; 14 from social sciences, such as political science and sociology; 22 from health sciences, such as medicine and dentistry; ten from performance, such as dance and music; and five from humanities, such as history and philosophy. Graduate liaisons from all departments across campus recruited faculty members to serve as participants in a study of ethical decision making.

Ethical Decision-Making Instrument

The measures of ethical decision making used to provide fodder for interviews in the study at hand was developed by Mumford et al. (2006). In order to develop this battery of measures, Mumford et al. (2006) reviewed codes of conduct across fields of study in order to establish general dimensions of ethical behavior in research: data management, study content, professional practices, and business practices. In order to tap these dimensions, six equivalent measures were developed with content varying by subject area—biological science, physical science, social science, health science, performance, and humanities—but covering similar ethical dilemmas.

Each of the measures described above includes between four and six scenarios. Each scenario then forms the basis for approximately five corresponding questions, each asking individuals to indicate the best two of the approximately eight responses provided. Each response bears a low, medium, or high label with regard to ethical decision making, with low responses representing poor ethical decisions, medium, moderate or acceptable decisions, and high, excellent decisions or choices. Mumford and colleagues provide construct validity evidence for this battery, including correlation of the measures with expected outcomes and causes of ethical decisions, in their 2006 validation piece. An example scenario, along with a follow-up question and relevant responses, is provided in Table 1.

The area-appropriate versions of these measures were made available to participants via Qualtrics, an online survey tool, allowing for scoring of measure responses to take place prior to participant interviews. Following completion, responses were scored on the basis of the system described above, with high responses receiving a larger number of points than low responses. Each participant received a score for each scenario, as well as a score for the measure overall formed by averaging individual scenario scores. Then, participant scores on each scenario were compared with their overall scores in order to identify scenarios where participants had displayed unusually good or poor ethical decision making. A cutoff of half a standard deviation was used for this procedure, such that scenarios with scores more than half a standard deviation higher than the participants' average scores were identified as examples of particularly good ethical decision making and those with scores more than half a standard deviation lower than average were pulled as examples of relatively poor ethical decision making. It is important to note that these scenarios were identified on the basis of their standing compared to each participant's average; no comparisons were made between participants.

Think-Aloud Interviews

The scenarios identified as extreme examples of good or poor ethical decision making for each participant were used as the basis for think-aloud interviews conducted with each participant approximately 1 week after completion of the measure. Interviews were conducted by industrial-organizational psychology graduate students familiar with the ethical decision-making literature. These interviewers asked participants to walk them through their thinking with regard to each answer for questions pertaining to the previously identified scenarios. Interviewers were not privy to whether each scenario had been identified due to receiving a higher or a lower score than the participant's average, and interviewees were not informed as to their scores on the measure or on any given scenario.

A series of interview questions developed on the basis of the think-aloud protocol literature (Fonteyn et al. 1993) were asked in order to encourage participants to think aloud about their decision-making processes. These questions, which were divided into an initial group, a follow-up group, and clarification questions, are provided in Table 2. In addition to these prepared questions, additional questions were asked when necessary on the basis of participant responses.

Interviewers participated in a two-month training program in order to standardize the interview procedure. The training process included two stages, one in which interviewers practiced on one another, with interviews recorded and reviewed for consistency, and one in which the interview protocol was piloted with two faculty volunteers. The latter interviews were also recorded and reviewed.

Interviews with participants were recorded. These recordings were then transcribed by a university service in order to allow for further analyses.

Content Analysis

Transcribed interviews were content analyzed with the help of a computer-assisted qualitative analysis program, NVivo. A list of keywords associated with conflicts of interest was developed and then reviewed by subject-matter experts in the area of ethical decision making. These keywords are presented in Table 3. Within NVivo, these keywords were then used to identify excerpts of transcripts where participants discussed topics relevant to the subject matter at hand. The identified text was then exported from NVivo and assessed in order to eliminate any false hits.

Content that was deemed relevant to conflicts of interest was then sorted into themes, each representing a different approach to handling these conflicts. Subject-matter experts then reviewed these themes in order to assess the degree to which they represented an accurate picture of faculty responses to issues involving conflicts of interest.

Results

Because some participants discussed personal experiences in their interview responses or spoke in ways that would otherwise render them identifiable, no exact quotes have been presented in this report. Rather, the quotes below represent close approximations of participant statements rather than word-for-word examples from transcripts of participant interviews.

Within the 105 participant response excerpts deemed relevant to the topic at hand, five themes emerged, some with additional subthemes. The overall themes were (1) disclosure, (2) self-removal, (3) accommodation, (4) denial, and (5) recognition of complexity. Each theme will be discussed below, as well as subthemes illustrating nuances in differing interpretations of the best ways to handle conflict situations.

Disclose Your Conflict of Interest

Of the original group of 105 response excerpts, 61 implied that the best way to handle conflicts of interest is simply to disclose them. This majority of responses was then split into four subthemes to differentiate between different reasons cited for disclosure: (1) transfer, (2) advice, (3) awareness, and (4) procedure. Responses in each subtheme are described below.

Transfer: Place the Decision in the Hands of an Authority—Of the excerpts discussing disclosure, 22 of these stated that the reason for disclosing conflicts of interest is

to transfer responsibility for decision making regarding how to handle those conflicts to an authority figure or another involved party. Examples similar to excerpts for this subtheme include, “It would be appropriate to call the director and notify him of the conflict of interest. He may well say that you should not review it,” or, “The board might say that you’re right and remove you from the reviewer position, which would be good because then the decision would no longer be in your control.”

Advice: Ask an Authority What to Do—Three of the responses grouped in the disclosure theme involved telling an authority figure about the conflict interest for the purpose of garnering advice to help make a decision rather than with the goal of relinquishing control over the decision. Some examples of this subtheme include, “I would advise the chair and ask for his advice regarding whether I should review this or not,” or “I have been in situations in the past in which I have had to ask someone above me or have given advice.”

Awareness: Someone Should Know About this—Fifteen of the 61 disclosure excerpts discussed disclosing a conflict of interest simply because someone else should be aware. While this approach may imply that advice will be given or that decision responsibility will be removed, participants speaking in this theme did not explicitly state that these were the channels of reasoning they used. Examples excerpts are along the lines of, “It is important to discuss these issues with involved parties right away,” and, “He needs to tell someone that he’s volunteering for another organization.”

Procedure: Follow Guidelines for Disclosing Conflicts of Interest—Individuals in this category invoked the power of guidelines in informing their decision-making processes. Twenty-one excerpts fell into this category. Examples include, “As long as the IRB is willing to approve the study, you may just have to jump through hoops,” and, “Disclose the conflict of interest; there’s a place on the form for that.”

Removal: Take Yourself Out of the Situation Immediately

Some individuals indicated that it is appropriate to immediately remove oneself from situations in which a conflict of interest may influence decision making. Twenty-five participant excerpts fell into this category. Some examples include, “Remove yourself from the board and make sure that no further activities pose conflicts of interest,” and, “I’m not going to do this; I’m not even going to explore it. I have this other thing going on.” These excerpts, rather than illustrating that disclosure is acceptable and sufficient, take the opposite stance: That there are no appropriate ways to manage conflicts of interest other than removal.

Accommodation: Everyone Has Conflicts of Interest: Just Work Around Them

Contrastingly, seven response excerpts presented the view that conflicts of interest are a part of everyday scientific research and are not matters of concern. Examples representing this theme are as follows: “You could do much more by combining your resources with a company than you could on your own, so I would like to do as much as I can and avoid the conflict,” or, “A person without much research experience might think that someone with a

conflict of interest should remove himself, but that perspective doesn't consider the collaborative relationships between investigators."

Denial: I Do Not Believe this is a Conflict of Interest

Five response excerpts indicated denial that a conflict of interest was present, even in scenarios that had been crafted with the purpose of including such conflicts. These participants expressed sentiments such as, "I am not sure why this represents a conflict of interest," or, "For him to work with both groups does not seem inappropriate to me." These individuals rejected the notion that a conflict of interest was present at all.

Recognition of Complexity: Conflicts of Interest are Difficult to Handle

The final theme identified in participant responses consisted of excerpts that essentially just recognized that conflicts of interest are challenging. Five excerpts were grouped into this category. Examples of this perspective included: "There's a balancing act between what you may do as a private citizen and what you may be allowed to do within the bounds of your job," and, "This is a very difficult situation at this point." These participants often did not offer a concrete or specific solution; instead, they reacted by pointing out complexities inherent in situations involving conflicts of interest.

Discussion

Before turning to the implications flowing from the present study, a number of limitations should be noted. First, because participants were aware that the effort at hand focused on ethical decision making in research, they may have felt pressure to describe conflicts of interest in a manner in keeping with their understanding of relevant ethical guidelines. However, due to the fact that some responses displayed questionable levels of concern regarding the potential consequences of conflicts of interest, it would appear that such pressure did not prevent participants from displaying views conflicting with relevant guidelines.

In addition, participants responded to questions involving pre-existing cases rather than freely discussing their own experiences regarding conflicts of interest. Nevertheless, participants addressed concerns surrounding conflicts of interest in ways that reflected what they believed to be general best practices for dealing with situations along these lines. Therefore, it is reasonable to conclude that participant responses are consistent with real-world reactions despite the use of fictional cases to prompt discussion along these lines.

Despite these limitations, the present effort offers a number of valuable insights with regard to perspectives on conflicts of interest within academia. Our first research question asked what themes would appear in the ways in which researchers viewed conflicts of interest. The most frequently appearing theme in participant responses reflects the findings previously identified by Bero et al. (Boyd and Bero 2007; Glaser and Bero 2005). Most researchers appear to believe that it is sufficient merely to disclose conflicts of interest. This echo of previous findings serves to emphasize the conclusion that this view is widespread among research scientists. However, simply reporting a conflict of interest without any attempt to

manage that potential conflict is unlikely to fully undermine the likelihood of bias creeping into scientific practice and results.

The second most prevalent theme identified in the present study included the suggestion that researchers with conflicts of interest should remove themselves immediately from the situations in question. While this extreme approach might decrease the researcher's own potential to produce biased work, it might also result in a severe loss of relevant expertise. Thus, a more nuanced approach may be more appropriate.

A minority of participants made statements to the effect that conflicts of interest are unimportant and should be worked around. Statements in this theme represent a potentially inappropriate degree of nonchalance. However, the idea of working around conflicts of interest—or, ideally, of working to ensure that these conflicts do not bias practice or results—may have virtue.

A small number of participants rejected the idea that conflicts of interest came into play in the scenarios they read. Finally, some participants simply stated that conflicts of interest are difficult to handle without making substantial recommendations regarding appropriate next steps. While simplistic, these excerpts may represent an adaptive response to conflicts of interest. After recognizing the difficulty inherent in working with conflicts of interest, researchers may respond by creating structures of checks and balances to avoid bias due to conflicts of interest.

Our second research question asked what moral disengagement operations come into play in order to allow researchers to feel comfortable allowing conflicts of interest the potential to influence their work. Some of the themes and subthemes described above bear features displaying similarity to Bandura's (1999) moral disengagement operations. Specifically, with regard to the theme regarding disclosure of conflict of interest, variety exists regarding the disengagement operations exhibited. Some participants discussed disclosing the conflict in order to place the decision regarding their continued participation in relevant research in the hands of an authority figure. This approach strongly resembles displacement of responsibility, where individuals place the onus of their behaviors on an authority.

Other researchers stated that conflicts of interest are acceptable as long as others are made aware. This justification displays diffusion of responsibility. If other individuals are aware of the conflict, then they too share responsibility for any bias flowing from that conflict, diminishing the extent to which the conflicted researcher is held to blame. Other participants suggested that as long as procedural guidelines for disclosing conflicts of interest are followed, there should be no problem. By suggesting that the issue at hand is the need to follow guidelines, rather than the need to avoid bias of results, participants displayed distortion of consequences, described by Bandura (1999) as minimizing or ignoring the harms of unethical actions.

Some researchers indicated that everyone has conflicts of interest, making them unimportant. Such an approach represents a sort of advantageous comparison. By comparing themselves to others who possess conflicts of interest, researchers whose responses fall in this theme justify their behavior through contrast. Finally, some individuals expressed

disbelief that conflicts of interest existed in the scenarios presented. Again, this approach represents disregard for consequences, ignoring the potential negative influence of situational factors.

Given the above explanation, it would appear that certain moral disengagement mechanisms, specifically advantageous comparison, displacement of responsibility, diffusion of responsibility, and disregard or distortion of consequences, are used by researchers in order to justify the continued presence of conflicts of interest in the research domains.

The findings described above bear a number of practical implications for the control of conflicts of interest within the scientific research community. First, educating researchers with regard to ways to address conflicts of interest other than disclosure appears to be a necessary next step. For example, in addition to disclosure, researchers might be advised to build checks and balances into their research in order to address potential biases due to conflicts of interest. In addition, educating researchers regarding the moral disengagement mechanisms typically acting to reinforce the influence of conflicts of interest may help to prevent the use of these operations by researchers. Finally, given the dependence of researchers on the authority to whom conflicts of interest are disclosed to control potential bias, it may be that greater oversight of research endeavors wherein such conflicts have been reported would be of great benefit.

While the study at hand does provide useful implications with regard to the views of researchers regarding conflicts of interest, areas related to these points are much in need of future research. First, it is unclear what the best ways to manage conflicts of interest within research settings may be, once these conflicts of interest have been disclosed. Also, it remains to be seen which approaches to the management of conflicts of interest as delineated by the themes described above are the most detrimental to research efforts in terms of the amount of bias accommodated.

In conclusion, the study at hand sought to identify themes in the perspectives of faculty researchers with regard to ways to respond to conflicts of interest. Five overall themes were identified: (1) disclosure, (2) self-removal, (3) accommodation, (4) denial, and (5) recognition of complexity. The disclosure theme was further broken into four subthemes: (1) transfer, (2) advice, (3) awareness, and (4) procedure. In addition, moral disengagement operations (Bandura 1999) were offered as explanations for these themes in faculty perceptions. It is our hope that the present study will provide insight with regard to the best ways to combat the increasing prevalence of conflicts of interest in research.

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Table 1**Example ethical decision-making measure scenario and questions**

Dr. Cedar, a young developmental psychologist, obtained an Early Career Research Grant from the National Institute of Child Health and Human Development to study aggression in elementary school children. Cedar suspects that some children with a certain genetic makeup will be especially susceptible to the effects of television violence. Part of the project requires obtaining a cheek swab for DNA analysis, but interviewing and observing children in the classroom constitutes the major effort. Cedar is collaborating with a well-known senior social psychologist, Dr. Dawson. Given the geographic distance between their universities, the labs communicate primarily via email

(1) Considering the sensitive nature of the project, Cedar is concerned that parents will be reluctant to allow their children to participate. He is writing the informed consent form and worries that too much detail might discourage participation. How should Cedar handle this issue? Choose *two* from the following:

- (a) Use wording like that of a past study involving similar procedures. (M)
- (b) Offer parents the option to contact participants from past data collection efforts to alleviate their concerns. (L)
- (c) Contact parents via phone to explain the importance of granting permission for their child's participation. (L)
- (d) Send a follow up letter to non-consenting parents explaining that the risks are minimal. (L)
- (e) Mention the minor potential risks in the informed consent along with the benefits of the research. (H)
- (f) Describe all possible risks in the informed consent form, no matter how trivial. (M)
- (g) Send an IRB-approved handout along with the informed consent form addressing parents' common questions and concerns. (M)
- (h) Risks of the study are trivial; deemphasize them in the informed consent form. (H)

Item responses are labeled to indicate whether they represent low-quality (L), medium-quality (M), or high-quality (H) responses to the ethical decision-making scenario

Table 2

Standardized interview questions

Wave one

Guide me through the thought process behind your answers

What were your thoughts when you chose this answer?

How did you arrive at those answers?

What sticks out to you about this situation?

Wave two

What did you see as the primary dilemma in this issue?

What were some things that stuck out to you about this question?

What outcomes did you consider when you selected your answers?

How did your professional expertise help you to choose your answers?

How was this scenario relevant to your experience?

What factors did you consider when you chose those answers?

What dilemma did you see with these answers?

Was this question easy or difficult to answer? Why?

When have you seen someone in a similar situation make poor decisions? What did they do or not do?

What professional guidelines did you think about when working through this exercise?

Clarification

How so?

Could you expand upon ...?

What did you mean when you said ...?

Table 3

Conflict of interest keywords

“Conflict of interest”	“Multiple interests”
Conflict	“Gut feeling”
Funding	Potential
Backing	Statement
Financing	“Catch it”
Resources	Disclose
Inappropriate	Acknowledge
Improper	Divulge
Unseemly	Reveal
“Out of line”	Objective
Constitutes	Bias
Judgment	Subjective
Reasoning	Personal
Possibility	Compliance
“Own research”	

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