Lateral attitude change: displacement effects as a reaction to blatant social influence

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Abstract

According to the lateral attitude change (LAC) model, lateral (i.e., indirect) attitude change may occur in the absence of focal (i.e., direct) attitude change. To examine such *displacement effects*, we asked 124 participants to assume a teacher's role and grade two moderately good essays. They graded the first essay once before and once after they learned the (very good vs. very poor) grade the essay had allegedly received by a professor. Given that the professor's grade represented a blatant, disproportionate influence attempt, we hypothesized focal resistance (i.e., no attitude change toward the first essay) but a displacement effect (i.e., attitude change toward the second essay). Instead of displacement, results indicated generalization (focal and lateral effects). However, among participants who had resisted the influence attempt ($n = 65$), a displacement pattern was observed. Implications for the LAC model are discussed.

Keywords Displacement effect · Explicit attitude · Generalization · Implicit attitude · Lateral attitude change · Persuasion

The lateral attitude change model (LAC model; Glaser et al., 2015) describes direct and indirect attitude change effects. Accordingly, all phenomena in which an attempt to change attitudes toward a particular topic (i.e., the focal object) result in attitude change toward related topics (i.e., lateral objects) can be described as LAC. This includes both generalization and displacement effects. Generalization means that attitudes toward both the focal and lateral objects change. Displacement refers to a situation in which a (focal) influence attempt leads to a change in attitude towards lateral but not focal objects. There are several models in psychology that explain indirect attitude change (such as the stereotype rebound effect, Macrae et al., 1994, or the anchor-and-adjust heuristic by Tversky & Kahnemann,

1974; for a review, see Glaser et al., 2015). However, the LAC model is special in that (1) it is considerably more general than most other, more specific, models and (2) it can explain both generalization and displacement with a single explanatory approach.

LAC defines generalization and displacement as an interplay of automatic associative (assessed with implicit measures) and deliberate propositional (assessed with explicit measures) evaluations in line with assumptions of the associative-propositional evaluation (APE) model by Gawronski and Bodenhausen (2006; for alternative single-process models, see e.g., DeHouwer, 2009). According to LAC, any influence attempt results in attitude change toward the focal object on an associative level: An evaluation of the focal object in line with the new information is automatically activated (Glaser et al., 2015). This focal associative change then spreads to lateral attitude objects, which are associatively linked with the focal object in memory. As a result, lateral associative change occurs; the automatic evaluation of the lateral objects now corresponds to the initial influence attempt. However, associative attitude change may be either confirmed or rejected on a propositional level. Propositional confirmation is considered the default (see Gawronski & Bodenhausen, 2006) and would result in explicit generalization. However,

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further deliberations may also result in a rejection of associative attitude change and thus, no attitude change toward the focal object on a propositional level. Moreover, given that any additional deliberations are usually related to the initial influence attempt, it is likely that they would affect attitude change only toward the focal but not toward the lateral attitude object. Thus, propositional rejection allows for lateral attitude change on a propositional level even if focal change was rejected. In LAC terminology, the resulting effect is called displacement.

To illustrate, imagine a used-car dealer trying to sell an electric car. From a LAC perspective, we would expect that already the influence attempt, arguing in favor of the car, would lead to a positive evaluation of the car on an associative level. Furthermore, associative spreading should take place and objects similar to the car (i.e., lateral objects) will also be positively evaluated on an implicit level. Lateral objects could be other electric cars, other cars of this salesperson, or also means of transportation generally perceived as environmentally friendly, such as bicycles or the bus. Now, it cannot be ruled out that the car salesperson corresponds to the stereotype (or activates it) and is perceived as untrustworthy. In this case, we expect the associative attitude change toward the car for sale (the focal object) to be rejected propositionally. Whether the associative attitude change toward the lateral objects is also rejected now depends on whether the reasons for the focal rejection are applied here. In the case of other cars from the same salesperson, this is likely; in the case of bicycles and buses, it is rather unlikely. Thus, displacement might occur: Attitudes toward the electric car do not improve because the source of communication is distrusted. However, this distrust does not affect whether the associative attitude change toward (e.g.) the bicycle is accepted, which can lead to LAC.

Despite considerable support for the LAC model's predictions regarding generalization effects (i.e., both focal and lateral propositional change; Bohner et al., 2021; Brannon et al., 2019; Cruz, 2019; Linne et al., 2020), support for displacement effects is scarce (Linne et al., 2020, Experiment 3). Nonetheless, some older studies found patterns similar to displacement (for an overview, see Glaser et al., 2015). Specifically, Steele and Ostrom (1974) conducted one study reporting lateral effects in the absence of focal effects. Their participants read descriptions of two criminal cases. After making a sentencing judgment regarding the first case (in LAC-terminology: the focal object), they were informed that the punishment actually given by the case's judge was very harsh. Participants were then asked to make a new sentencing decision in light of this information. Afterward, they read the second case (the lateral object) and made a sentencing

judgment for that case. The results showed that participants judged the second case more harshly than the first. Thus, the social influence conveyed via the judge's decision had influenced the lateral judgment more strongly than the focal judgment. Although Steele and Ostrom (1974) explain this in terms of a shift in participants' subjective reference scales, we interpret their findings as a displacement effect (see Glaser et al., 2015, pp. 263–264): The extremely harsh sentencing decision of the judge was rejected at a propositional level because it was blatantly unacceptable. Nevertheless, at an associative level, the information about the judge's decision may have been influential regarding the focal case and spread toward the evaluation of the lateral case. The propositional reason for rejection (extreme harshness of the sentence), however, was applied only to the focal case, whereas associative change toward the lateral case was confirmed.

Present research

Here we study the hypothesized displacement effect in LAC (Glaser et al., 2015) by conceptually replicating and extending Steele and Ostrom (1974). Instead of using a mock jury procedure, we created a scenario closer to the daily experiences of our participants. We asked students to grade two essays of moderate quality that were allegedly written by first-year students. As a source of blatant social influence, we presented a psychology professor's grading of the first essay. This grading was so extreme (either positive or negative) that we predicted it to be rejected by participants when they were allowed to make a second evaluation of the same essay (= the focal object). However, we predicted the professor's grade to be influential regarding the evaluation of a second essay (= the lateral object).

Previous attempts to prevent focal change have often failed, with participants changing their focal attitude despite manipulations that discredited the source (Lewandowsky et al., 2012; Linne et al., 2020). Nonetheless, given the similarity to the manipulation used by Steele and Ostrom, we expected the extremity of the grade to prevent focal attitude change. Additional to the explicit grading, extending Steele and Ostrom's design, we also assessed implicit evaluations of the alleged author's competence.

In sum, we hypothesized that our influence (valence) manipulation would produce no effect on participants' grading of the focal essay but would influence their grading of the second, lateral essay, with more positive (negative) grades given to the second essay when the professor had given the first essay a very good (very poor) grade. On an implicit level, according to LAC theory, we hypothesized

associative generalization, that is, both focal and lateral attitude change in line with the professor's grading.

Method

Participants and design

In total, 124 students (43 male, 78 female, 3 not specified; $M_{Age} = 24.30$) participated in a study on "quality control in student assessment". They read and evaluated both a focal and a lateral essay, which constituted two levels of a within-subjects factor (attitude object: focal vs. lateral). Essay content was counterbalanced. In contrast to Steele and Ostrom (1974), we used a full-factorial design (for advantages, see, e.g., Collins et al., 2009), with participants being randomly assigned to either a positive or a negative valence condition. With this sample size, statistical power (1 - beta) for detecting small- to medium-sized effects ($f = 0.15$) within a 2 (valence: positive, negative) x 2 (essay: focal, lateral) mixed ANOVA design, assuming correlated focal and lateral attitudes ($r = .47$; see Essays), was 0.90 (Faul et al., 2007).

Essays

Each essay (ca. 500 words) was about the life and work of a famous scientist (either Freud or Pavlov)[1]. Participants evaluated the essays using the grading system commonly used at universities and schools in the country, featuring the pass grades 1.0 (best), 1.3, 1.7, 2.0, 2.3, 2.7, 3.0, 3.3, 3.7, and 4.0 (poorest). We generated essays of moderate quality to ensure that a very good and a very poor grade would be perceived as equally inappropriate. In an independent pilot study ($N = 30$), the grades that the essays received (Freud: $M = 2.17$, $SD = 0.81$; Pavlov: $M = 2.38$, $SD = 0.85$) were equally ($p > .19$) moderate and approximately equidistant from the professor's inappropriate grades of 1.0 and 3.7. They were also correlated significantly, $r = .47$, $p = .009$, which indicated that focal and lateral attitude objects were indeed similar.

The essay about Freud was allegedly written by "Lisa S.", and the essay about Pavlov by "Kerstin W.". These names were repeatedly paired with the respective essay and were later used in implicit attitude assessment (see Procedure).

Procedure

Participants learned that their task was to support a quality control project by reading and grading two first-year student essays. After grading the first essay, participants were told

that a professor of the psychology department had graded the essay with either "1.0" (i.e., very positively) or "3.7" (i.e., very negatively). After learning about the professor's grade, participants were asked to grade the first essay once more. Subsequently, participants read and graded the second (lateral) essay[2].

Next, to assess implicit attitudes toward each essay, participants completed two single-target implicit association tests (ST-IATs; Wigboldus et al., 2004). To avoid assessing attitudes toward Freud and Pavlov themselves, each ST-IAT assessed associations between one of the alleged authors (Kerstin W. or Lisa S.) and the attribute pair *competent—incompetent*. In critical blocks, participants were instructed to correctly categorize the target and attribute stimuli (e.g., *intelligent*, *stupid*, *Kerstin W.*) by pressing either the "e" or the "i" key, depending on the corresponding category being displayed on the left or on the right side of the screen. Each ST-IAT started with a practice block of 20 trials with attribute stimuli only; then followed two critical blocks of 60 trials each. As an index of implicit attitudes, D-scores were computed (Greenwald et al., 2003).

Finally, participants provided demographic information, were thanked, debriefed, and compensated with EUR 2.50.

Results

Pre-influence grading of the focal attitude object

Participants' pre-influence grading of the focal attitude objects (i.e., focal essay) was similar to the pilot results, with the essay about Pavlov again tending to be graded somewhat less positively ($M = 2.49$, $SD = 0.64$) than the essay about Freud ($M = 2.24$, $SD = 2.75$), $t(122) = 1.96$, $p = .052$, but both means being equidistant from the professor's alleged grade. Furthermore, pre-influence grading of the attitude objects was independent of the valence condition, $t < 1$, which shows that randomization was successful.

Post-influence grading of the focal and lateral attitude object

Our hypotheses were tested via a 2×2 mixed-model ANOVA on post-influence grading, with attitude object (essay: focal vs. lateral) as a within-subjects factor and

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[1] Materials as well as data are available upon request.

[2] We also asked participants to evaluate the authors' competence, the comprehensibility, and quality of the focal and lateral essays. They also reported prior knowledge regarding the essay topics, indicated whether the professor's grades were justified and believable, whether they were satisfied with their own grades as well as with the grading in their field of study in general, and completed a short-scale of authoritarianism.
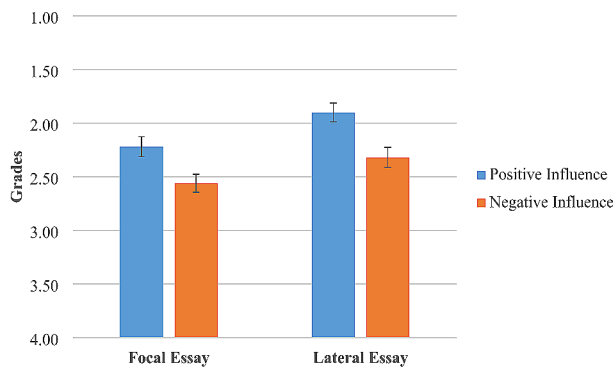
Fig. 1 Post-influence Grading of the Focal and Lateral Essay. *Note* Lower numbers indicate better grades
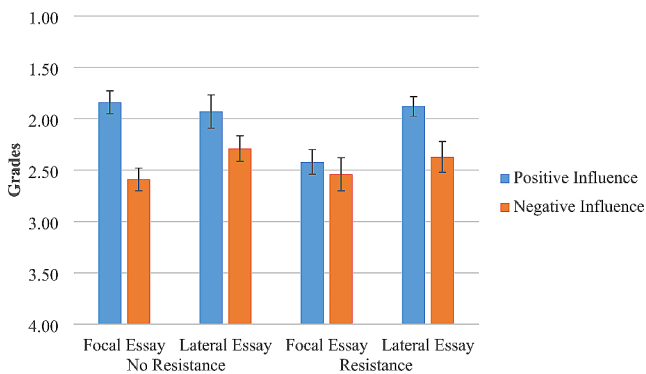

Fig. 2 Post-influence Grading of the Focal and Lateral Essay Depending on Participants Resisting Attempts to Change their Attitudes. *Note* Lower numbers indicate better grades

valence (positive vs. negative) as a between-subjects factor. Main effects emerged for valence, $F(1, 119) = 15.16$, $p < .001$, $\eta^2 = 0.113$, and attitude object (focal vs. lateral), $F(1, 119) = 12.63$, $p < .001$, $\eta^2 = 0.096$ (see Fig. 1 for the pattern of means). However, the predicted interaction of valence and attitude object (focal vs. lateral) did not emerge, $F < 1$.

In order to test focal and lateral effects separately, planned t-tests were computed. These revealed that participants graded the focal attitude object more positively in the positive-valence condition ($M = 2.22$, $SD = 0.73$) than in the negative-valence condition ($M = 2.56$, $SD = 0.69$), $t(121) = 2.65$, $p = .009$, $d = 0.48$. Likewise, participants graded the lateral attitude object more positively in the positive-valence condition ($M = 1.90$, $SD = 0.66$) than in the negative-valence condition ($M = 2.32$, $SD = 0.72$), $t(120) = 3.39$, $p = .001$, $d = 0.61$. Thus, the overall pattern is not in line with the hypothesized displacement effect; instead, it resembles a generalization effect with focal and lateral effects of roughly equal magnitude (see Fig. 1; however, descriptively a comparatively greater effect is evident laterally. This could be interpreted as a gradual, but not a complete displacement.).

Comparing participants who did versus did not resist focal change

As described above, there can only be displacement when recipients completely resist the initial attempt of eliciting focal attitude change. This was not the case in the present research when the whole sample was taken into account. Nonetheless, we explored whether displacement would be evident for those participants who had resisted focal change. Indeed, 65 participants had completely resisted focal change by grading the focal attitude object identically both pre- and post-influence (= resistance group), whereas 59 participants had shown some focal change (= non-resistance group). We thus ran a mixed-model ANOVA with (non-)resistance as an additional between-subjects factor. This yielded a significant 3-way interaction, $F(1, 117) = 5.53$, $p = .020$, $\eta^2 = 0.096$ (see Fig. 2 for means).

To diagnose simple effects, separate t-tests were conducted to analyze the effect of positive versus negative valence within each combination of attitude object (focal vs. lateral) and subgroup (non-resistant vs. resistant). For the *non-resistant* subgroup, this revealed a significant focal effect ($M = 1.84$, $SD = 0.52$ vs. $M = 2.59$, $SD = 0.66$), $t(56) = 4.55$, $p < .001$, $d = 1.27$, and a trend toward a weaker lateral effect ($M = 1.93$, $SD = 0.76$ vs. $M = 2.29$, $SD = 0.74$), $t(57) = 1.81$, $p = .075$, $d = 0.48$. Hence, a generalization pattern was evident for participants who did not resist the focal influence attempt. For the *resistant* subgroup, the t-tests revealed no focal effect ($M = 2.43$, $SD = 0.76$ vs. $M = 2.51$, $SD = 0.74$), $t < 1$, but a large and significant lateral effect ($M = 1.88$, $SD = 0.60$ vs. $M = 2.37$, $SD = 0.72$), $t(57) = 2.87$, $p = .006$, $d = 0.73$. Hence, a displacement pattern was evident for participants who resisted the focal influence attempt.

Implicit evaluations

The D-scores from the focal and lateral attitude objects' ST-IATs (theoretical range: -2 to +2) ranged from -0.70 to $+0.82$ (Freud essay) and -0.55 to $+0.81$ (Pavlov essay), respectively, with higher D-scores indicating a stronger association between the author and competence. Split-half reliability was good, $r_{guttman} = 0.954$ for the Pavlov essay and $r_{guttman} = 0.977$ for the Freud essay.

Using the complete sample, a mixed-model 2×2 ANOVA on implicit focal versus lateral evaluations with valence as a between-subjects factor yielded no significant effects, all $F < 1$. A second ANOVA, also including the (non)resistance factor, revealed a significant interaction between focal/lateral evaluations and (non)resistance, $F(1, 118) = 9.88$, $p = .002$, $\eta^2 = 0.077$, as well as a 3-way interaction including valence, $F(1, 118) = 7.22$, $p = .008$, $\eta^2 = 0.058$.

As shown in Fig. 3, ST-IAT data reflect an unexpected pattern of implicit effects. Implicit data mirror the pattern shown for explicit data, which implies a focal effect only for the non-resistance group and offers some support for a displacement-like effect pattern for the resistance group.

Discussion

Similar to Linne et al. (2020), we found explicit generalization of focal attitude change to lateral attitude objects not mentioned in the influence attempt. This effect occurred despite the use of a blatant social influence attempt intended to be seen as extreme and thus to elicit resistance. However, among those participants who did resist the persuasion attempt, a displacement pattern emerged.

Theoretical and methodological implications

On the one hand, the failure to achieve the exact preconditions for displacement (i.e., no focal attitude change at all) corresponds to previous findings in LAC (Bohner et al., 2021; Brannon et al., 2019; Cruz, 2019; Linne et al., 2020) and other research (e.g., Lewandowsky et al., 2012) that reported difficulties in undermining a persuasive message. Extreme positions are considered to be ineffective in persuasion attempts because they fall outside of participants' latitudes of acceptance (Zanna, 1993) or because they encourage elaboration (Petty et al., 2001), which may lead to resistance in case of weak arguments. However, our results regarding participants' impressions of how justified the professor's grade was[3] suggest that not all participants regarded the influence attempt to be extreme. Considering the power distance between
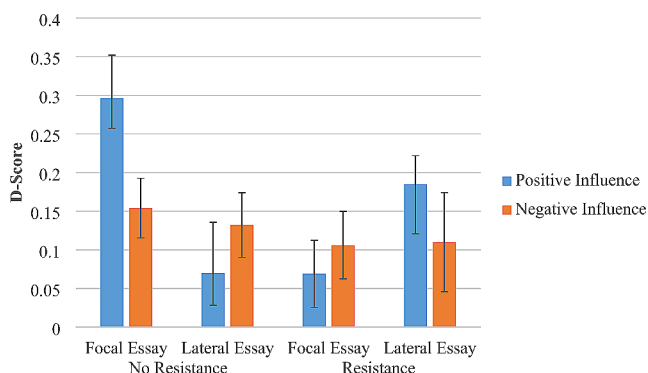

Fig. 3 Post-influence Implicit Evaluation of the Focal and Lateral Essay Depending on Participants Resisting Attempts to Change their Attitudes. *Note* Higher D-scores indicate faster reactions when the essay authors were paired with competence-related words

professor and participants (i.e., students), it may also be reasonable to assume a resulting perception of epistemic authority on the part of the professor. This could have resulted in the observed effect that a relevant proportion of the sample did not consider the professor's grades to be unjustified, let alone blatantly unacceptable. Given that we assume this rejection as the basis for displacement (vs. generalization), we have to admit that the extent to which we were able to fairly test the theory in this study was limited. Nonetheless, our data show that displacement patterns occurred in those participants for whom we would have expected it, in that those who focally resisted (even if it is not entirely clear why) displaced laterally. However, an even more extreme evaluation might have been more successful in eliciting resistance. For example, instead of giving (very) good or (very) poor pass grades, the professor could have given special praise or failed the student (this could be piloted). While not implemented in this study, this represents a potential approach to achieve clearer results in future research.

Although the present experiment underlines the methodological difficulty of preventing focal attitude change, it also revealed some novel findings relevant to LAC research. Importantly, the method we introduced prevented attitude change in at least a significant number of participants, and measuring focal attitudes both before and after the manipulation (as did Steele & Ostrom, 1974) allowed us to identify those participants. Thus, we could observe that participants who resisted focal attitude change did change their attitude toward the lateral essay in line with predictions regarding displacement effects. This allowed for a more precise test of displacement than the use of post-test-only designs in prior LAC experiments (e.g., Linne et al., 2020). Furthermore, by extending the design by Steele and Ostrom (1974), we were able to review their results in light of a novel theory and integrate them in LAC. By using a full factorial design, we could show that the indirect effects emerge for both negative and positive influence attempts and thus cannot be interpreted as a pure negativity effect. Additionally, including implicit measures allowed for a test of the processes underlying the expected LAC pattern (although the implicit patterns were not exactly as expected; see below).

However, despite the results being in line with theoretical assumptions, the data provided by the post-hoc division in terms of (non-)resistance have to be taken with a grain of salt: the (non)resistance factor is non-experimental and thus causal interpretations must remain tentative. Future research is necessary to explore why some individuals chose (not) to resist the persuasion attempt. While we explored some individual difference variables[4], based on the present study,

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[3] When asked whether the professor's grades were justified, participants reported a mean of 3.77 ($SD = 1.89$) on a scale from 1 = *not justified at all* to 7 = *completely justified*. This result was independent of influence and (non)resistance, both $t < 1$.

[4] Data were independent of variables introduced to explore potential reasons to resist persuasion; perceived (un)fairness of the grade, $\chi^2 = 0.124$, $p = .73$, and authoritarianism, $\chi^2 = 1.98$, $p = .16$.

our ability to predict who resists (and displaces) and who does not is limited. It would be conceivable to focus more on these issues in the future and test other possible variables of the situation and the individual (e.g., conformity) that may affect resistance. This would allow for an adjustment of the method and, therefore, for making a-priori assumptions about persuasion resulting in either generalization or displacement.

The role of implicit attitude change

The ST-IAT data provide some support for the assumption that participants who resisted the persuasive message exhibited a displacement effect. However, this resembles a pattern that the LAC theory proposes for explicit attitudes, but not for implicit attitudes. Specifically, LAC theory (Glaser et al., 2015) suggests that displacement occurs when (1) there is implicit generalization but (2) focal change is rejected on an explicit level. Our current data suggest a displacement pattern (i.e., no focal but lateral attitude change) is present not only on an explicit level but also on an implicit level. These findings may be interpreted in two ways: First, from a methodological viewpoint, the ST-IAT may not really measure implicit attitudes but instead reflect explicit attitudes as well (for an in-depth discussion, see Corneille & Hütter, 2020; Fiedler et al., 2006). Second, assuming that the ST-IAT data do represent implicit attitudes, we may need to conceptually re-address the basic process assumption of the LAC model that explicit displacement effects require generalization at the associative (i.e., implicit) level. Perhaps, instead, both implicit and explicit attitude change are the result of propositional processes (see De Houwer, 2009). In this respect, the present study joins a number of previous studies (Bohner et al., 2021; Brannon et al., 2019; Cruz, 2019; Linne et al., 2020) that reported support for basic LAC-assumptions (generalization and, in some cases, displacement as a consequence of certain given boundary conditions) but provided little evidence for the exact process assumptions of the LAC model (i.e., first associative generalization, then propositional evaluation). Theoretical deliberations on adjustments or alternative conceptualizations of LAC (Linne et al., 2020; Linne, 2021) should also be tested empirically in future research. Similarly, a replication of the present study with a more extreme manipulation would also allow an improved test of the displacement assumptions.

Nonetheless, our attempt to test LAC in an experiment inspired by Steele and Ostrom (1974) succeeded in eliciting generalization and displacement effects (on a propositional level). In line with LAC-assumptions, results imply that influence attempts can affect attitudes toward objects not directly targeted. This is the case even if the recipients resist the attempt to influence them, that is, their attitude towards the actual goal of this attempt has not changed. Participants who were influenced regarding the first essay also showed (weaker) attitude change toward the second essay. Participants who resisted attitude change regarding the first essay did show attitude change toward the second (i.e., they displayed a displacement effect). Despite the correlational nature of these results, they are nonetheless promising and in line with the LAC model and its displacement assumption.

Declarations

Ethics statement Informed consent was obtained for experimentation with human subjects; privacy rights were observed. The series of studies were reviewed and approved by the Ethics Committee of German Psychological Society.

Conflict of interest The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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