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Research Article

How inferred contagion biases dispositional judgments of others ☆

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Abstract

Drawing on recent evidence suggesting that beliefs about contagion underlie the market for celebrity-contaminated objects, the current work investigates how people can make biased dispositional judgments about consumers who own such objects. Results from four experiments indicate that when a consumer comes in contact with a celebrity-contaminated object and behaves in a manner that is inconsistent with the traits associated with that celebrity, people tend to make more extreme judgments of them. For instance, if the celebrity excels at a particular task, but the target who has come into contact with the celebrity-contaminated object performs poorly, people reflect more harshly on the target. This occurs because observers implicitly expect that a consumer will behave in a way that is consistent with the traits associated with the source of contamination. Consistent with the law of contagion, these expectations only emerge when contact occurs. Our findings suggest that owning celebrity-contaminated objects signals information about how one might behave in the future, which consequently has social implications for consumers who own such objects.

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Keywords: Contagion; Contamination; Signaling; Dispositional judgments

Introduction

Ever wonder what people think of a person who pays \$5000 for JFK's boxer shorts (CNN, 2003) or \$75,000 for a teacup used by Lady Gaga (Palmer, 2014)? Celebrity memorabilia is a serious and booming business in North America. Marquee Capital, for example, is an investment firm that specializes in selling items previously owned and used by prominent artists such as Madonna (Marquee Capital, 2016). The notion that such mundane objects will not only retain their value, but even appreciate, has sparked a wealth of research on the psychological underpinnings of the thriving market for secondhand celebrity

goods. One explanation is that consumers believe that some part of the celebrity, such as their soul or essence, has been imbued into the objects they have used (Newman, Diesendruck, & Bloom, 2011). Much of this has to do with the law of contagion.

The law of contagion explains why people tend to value objects that admired celebrities have come into physical contact with more so than objects that they have owned but never touched (Newman & Bloom, 2014). In particular, it has been theorized that people behave as though the essence of an object's previous owner is inherent in the object itself (Gelman, 2003; Newman et al., 2011). This is consistent with the finding that people are willing to pay more for George Clooney's sweater as long as it has not since been dry-cleaned (Newman et al., 2011). It is as if the "Clooney Cooties," as Bloom (2011) put it, could be sterilized away. Critically, this was not the only finding of note from Newman et al. (2011). A lesser discussed observation was that people were also willing to pay less for George Clooney's sweater if they were forbidden from telling anyone that Clooney had previously worn it (Bloom, 2011).

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This highlights how the law of contagion may play a role in conspicuous consumption.

If there is indeed a social signaling motive to owning contaminated celebrity goods, this raises the question of whether the signal incorporates the essence of the celebrity, and if so, whether this essence then transfers in the eyes of an observer. For the sake of simplicity, we use the term celebrity in the definitional sense of the word, as someone being well-known or famous for having specific qualities, accomplishments, or traits (Leslie, 2011; Oxford Dictionary, 2016; Turner, 2013). Given that people make inferences about others based on the products they own (Bellezza, Gino, & Keinan, 2014; Shavitt & Nelson, 1999), it seems plausible that there may be social implications to owning and, in particular, having contact with products that have been previously used by celebrities. Importantly, this also implies the possibility that such signals could backfire.

Evidence suggests people believe traits such as moral qualities and abilities can transfer through mere physical contact (Kramer & Block, 2014; Nemeroff & Rozin, 1994). Such contact can be indirect and take place by way of a *vehicle*, such as a product (Rozin & Nemeroff, 2002). Thus, if Tiger Woods used a putter that was later sold on auction, people may implicitly believe that some aspect of Tiger Woods has transferred to the putter's new owner. This could have important implications given that people often draw upon information about someone's inferred traits in order to predict how they might behave in the future (Jones & Skarlicki, 2005; Pyszczynski & Greenberg, 1981). It is in this sense that signaling ownership of a celebrity object may elicit an expectation that the new owner will perform accordingly, bringing about unintended consequences if the new owner does not meet these expectations. For example, if someone were to miss a putt while using Tiger Woods' putter, others may infer that this individual is rather poor at golf—a judgment that would be more severe than if they had missed with a generic putter. This has interesting implications given that it would suggest the high prices paid for celebrity owned goods may be telling others much more about the buyer than their social status or degree of fandom.

Taken as a whole, this research lends several important theoretical insights. First, we identify a novel signal communicated by celebrity contaminated goods and the social implications of this signal. Specifically, our results indicate that the essence of an object's previous user is incorporated into the signal that observers receive. Furthermore, we find that by being observed with an object previously used by a celebrity (as opposed to one that was merely owned but never used), consumers influence what others expect from them. Subsequently, when a target's behavior violates those expectations, dispositional judgments about the target are augmented. This can be good or bad. For instance, if the source of contamination excels at a particular task (i.e., positive contagion), yet the target who has come into contact with the product performs poorly, people tend to attribute the poor performance to a lack of ability (Studies 1 and 2) or competence (Study 3). Conversely, if the source of contamination is known to be immoral (i.e., negative contagion), yet the target who has come into contact with the

product behaves morally, people infer greater dispositional morality (Study 4). Critically, we demonstrate that this effect is driven by expectations, which are set as a result of having contact with the contaminated object.

Conceptual development

Signaling through consumption

Extant research suggests that consumption offers a rich means of communicating information about oneself (Belk, 1988; Miller, 2009; Saad, 2013; Veblen, 1899/2005). As Veblen (1899/2005) observed, people sometimes purchase expensive and ostentatious products merely to demonstrate that they can afford to do so. However, people often use products to convey much more complex signals than mere economic standing. For example, products can communicate group membership (Cialdini et al., 1976; Wicklund & Gollwitzer, 2013), personality (Miller, 2009; Vazire & Gosling, 2004), and even the devotion of a romantic partner (Wang & Griskevicius, 2014). It is in this sense that consumers are perpetual signal senders. However, in order for a signal to be effective, it must be reliably received by a passive observer (Dunham, 2011; Searcy & Nowicki, 2005).

When attempting to understand what kind of person someone is, observers often consider consumption-related cues (Bellezza et al., 2014; Haire, 1950; Shavitt & Nelson, 1999). Indeed, researchers have found that people make trait inferences about consumers based on the products they use, such as the clothing they own (Burroughs, Drews, & Hallman, 1991) or their music preferences (Rentfrow & Gosling, 2006). Furthermore, observing consumption often provides an inferential basis for forming expectations about a person (Gosling, Ko, Mannarelli, & Morris, 2002; Sundie et al., 2011). For example, someone who purchases a rock music CD may be perceived as extraverted and therefore more likely to be outgoing and to value an exciting lifestyle (Rentfrow & Gosling, 2007).

To date, much of the work on signaling through consumption has focused on how expectations about a consumer are predominantly derived from the inherent features of the products they own (Bellezza et al., 2014; Miller, 2009; Rentfrow & Gosling, 2007). Such features might include the tempo of a song (Rentfrow & Gosling, 2003) or a car's brand name (Sundie et al., 2011). However, recent evidence suggests people also reason about the unique history of individual objects (Bloom, 2011; Gelman, Manczak, Was, & Noles, 2016; Newman & Bloom, 2014). For example, the value placed on a seemingly ordinary sweater can be increased if the owner can convey that the sweater was worn by an admired celebrity (Newman et al., 2011). Thus, in addition to the inherent features a particular object might possess, the object's history is also incorporated into its overall signaling value (Bloom, 2011; Gelman, 2003). One of the main reasons consumers put such emphasis on the history of an object is because of the human tendency to believe that objects can retain the essence of the object's creator or previous owner (Nemeroff & Rozin, 1994; Newman & Bloom, 2012). This inference finds its roots in the

second law of sympathetic magic, the law of contagion (Rozin & Nemeroff, 2002).

The law of contagion

From as early as the age of four, people possess the basic understanding that physical contact can result in contamination (Fallon, Rozin, & Pliner, 1984). Although this makes rational sense in the case of pathogens or chemical contaminants, people tend to overextend the principle of contagion to infer the transference of abilities, dispositions, and moral qualities (Rozin & Nemeroff, 2002). The law of contagion refers to a form of magical thinking that entails the pervasive belief that various attributes can transfer through physical contact (Nemeroff & Rozin, 2000; Rozin & Nemeroff, 1990; Rozin, Nemeroff, Wane, & Sherrod, 1989). This law holds that properties can transfer directly from a source to a target (i.e., person-to-person contact) or indirectly through a vehicle (i.e., an inanimate third object; Rozin & Nemeroff, 2002). As an example of the latter case, people are reluctant to wear a shirt previously worn by someone considered to be evil for fear that some negative aspect of that individual would contaminate them (Nemeroff & Rozin, 1994). This is believed to occur by way of an *essence*, which is “an underlying reality or true nature... that one cannot observe directly” (Gelman, 2003, p. 8). Furthermore, one need only infer contact for contagion to influence behavior (Fallon et al., 1984; Rozin et al., 1989).

Evidence suggests that judgments about a product can be impacted by the inferred physical contact of other people (Argo, Dahl, & Morales, 2006, 2008; Galoni & Noseworthy, 2015; Nemeroff & Rozin, 1994; Newman & Bloom, 2014; Newman et al., 2011). Critically, contagion can also bias people’s expectations about future experiences (Nemeroff & Rozin, 1994; Rozin et al., 1989). For example, people expect that wearing a particular sweater will be more pleasant if it had previously been worn by an admired celebrity as opposed to someone they consider to be evil (Newman et al., 2011). It is in this sense that contagion is often observed as a valenced response in that people expect that contact with a particular item will be positive or negative depending on the source of contagion (Nemeroff & Rozin, 1994; Newman et al., 2011; Rozin, Markwith, & Nemeroff, 1992).

Valence notwithstanding, recent evidence suggests contagion can also influence people’s performance. Lee, Linkenauger, Bakdash, Joy-Gaba, and Proffitt (2011) demonstrated that people were more successful while putting if they believed the putter they were using had been previously used by a professional golfer. Similarly, Kramer and Block (2014) found that using an exam booklet that had been touched by a highly creative person enhanced creative behavior on subsequent tasks. Critically, this increase in creativity was driven by elevated confidence and performance expectations. Given that beliefs about contagion inherently apply to both self and others (Rozin & Nemeroff, 2002; Rozin et al., 1992), it stands to reason that people will also expect that contaminated others will behave in accordance with the essence that has transferred to them. If so, this may have

pronounced implications if the contaminated other violates these expectations.

Expectations and dispositional judgments

If an object’s history can set expectations about its owner’s traits or behavior, then how might an observer respond if the target’s behavior is inconsistent with those expectations? Here, we use the term expectancy violation to refer to the response elicited by an observation that sufficiently deviates from one’s expectations (Kanazawa, 1992; Sanna & Turley, 1996). The implications of violating expectations have been widely explored (Berlyne, 1966; Meyer, Reisenzein, & Schützwohl, 1997). Violations evoke curiosity (Noseworthy, Di Muro, & Murray, 2014), encourage attention (Gendolla & Koller, 2001), and elicit more extensive explanations (Clary & Tesser, 1983). These downstream effects result from the basic need to view one’s circumstances as predictable and manageable (Heider, 1982/2013; Kelly, 1972). That is, a person can regain a feeling of mastery over their environment by successfully rationalizing an unexpected event (Heider, 1982/2013). This has important implications in a social context.

People possess the desire to understand and explain the behavior of others (Berscheid, Graziano, Monson, & Dermer, 1976; Jones & Davis, 1965). However, the likelihood of this being an active and involved process is highly contingent upon how the target’s behavior relates to the observer’s expectations (Hastie, 1984; Wong & Weiner, 1981). When a target behaves in accordance with expectations, observers are less likely to actively explore the cause of the target’s behavior (Pyszczynski & Greenberg, 1981). Conversely, when a target violates expectations, observers become motivated to explain the discrepancy (Hastie, 1984; Pyszczynski & Greenberg, 1981; Weiner, 1985). Critically, some explanations are more likely to be adopted than others. In particular, researchers have demonstrated the tendency to attribute the behavior of others to their disposition, which refers to the internal, psychological determinants of behavior such as one’s inherent personality or traits (Gilbert, Pelham, & Krull, 1988; Jones & Davis, 1965; Ross, 1977; VandenBos, 2007). It is in this respect that behaviors which violate expectations tend to augment dispositional judgments (Hansen & Stonner, 1978; Kelly, 1972).

When assessing others, an observer’s expectations are informed by various cues, such as knowledge about the person’s ability (Wong & Weiner, 1981) or moral character (Jones, Schwartz, & Gilbert, 1984). Intuitively, people tend to believe that individuals will behave in accordance with their known traits or previous behavior (Heyman & Gelman, 1999; Pyszczynski & Greenberg, 1981). Given that people believe traits can transfer through mere physical contact (Nemeroff & Rozin, 1994; Rozin & Nemeroff, 2002), and that contagion can bias expectations (Kramer & Block, 2014), we predict that owning a celebrity-contaminated object signals the contagious transfer of the celebrity’s essence, creating an intuitive expectation that the owner will behave accordingly. Furthermore, if the consumer does not behave accordingly, this will elicit more severe dispositional judgments about them (Jones & Davis, 1965;

Ross, Greene, & House, 1977). Importantly, because contact, be it observed or inferred, is essential for contagion (Frazer, 1890/1959; Mauss, 1902/1981; Rozin & Nemeroff, 2002), this predicted effect should only manifest when contact has occurred. Stated formally,

H1. When a target touches an object previously used by a celebrity, as opposed to an object that the celebrity previously owned but did not use, people will make stronger dispositional judgments about the target when the target exhibits behavior that is inconsistent with the traits associated with that celebrity.

H2. Expectations will mediate the effect of celebrity contamination on dispositional judgments such that they will account for the stronger dispositional judgment when the target is observed with an object previously used by a celebrity, versus owned but not used, and subsequently behaves in a way that is inconsistent with the traits associated with the celebrity.

Overview of the current research

In the four studies that follow, we examine the signaling properties of celebrity objects and how consumers who conspicuously interact with these objects are perceived by others. In Study 1 we find support for H1. Specifically, we demonstrate that using an object that a celebrity has used (versus one they owned but never used) results in augmented dispositional judgments when the target's behavior is inconsistent with the celebrity's traits. In Study 2 we conceptually replicate Study 1 and, in support of H2, we identify expectations as the mechanism driving dispositional judgments. In Study 3, to isolate the role of contagion, we identify a boundary condition whereby we show that this effect does not emerge amongst individuals who possess low trait levels of contagion sensitivity (i.e., the degree to which people are differentially attuned to contagion; Newman & Bloom, 2014; Newman et al., 2011). Finally, in Study 4, we show this effect in response to negative contagion and demonstrate that it replicates when the source of contagion is infamous for their moral character (as opposed to their abilities).

Study 1

Study 1 was designed with two objectives in mind. First, we sought to test H1 and thus examine whether owning a celebrity object can bias dispositional judgments about a consumer when they behave in a way that is inconsistent with the celebrity's traits. Second, we designed the study such that we could rule out alternate explanations around semantic priming or latent associations. In particular, one possible reason why owning a celebrity object might bias judgments about a consumer is that the object cues associations related to that celebrity, and observers are merely responding to semantic links in memory (e.g., Tiger Woods = good at golf). However, if celebrity objects influence judgments due to a belief in the contagious transfer of the celebrity's essence, this effect will be contingent upon physical contact (Nemeroff & Rozin, 1994; Rozin et al.,

1989). Thus, similar to prior work (Newman et al., 2011), we adopted a design that would allow us to directly manipulate contagion.

As an additional insight, we wanted to demonstrate this effect in a situation where the celebrity object is integral to the achievement context. Although celebrity objects are far more likely to be put on display than to be actively used, there is a strong theoretical rationale for evoking a usage scenario. Recent evidence suggests that contaminated objects directly involved in an achievement task can improve actual performance (Kramer & Block, 2014; Lee et al., 2011). For example, Lee et al. (2011) found that people were more successful while putting when they believed the putter they were using was previously used by a professional golfer. If inferred contagion can alter actual performance, and if others can infer contagion when observing a target, then we should observe the predicted influence of contagion on dispositional judgments in an actual usage scenario.

Design and procedures

Participants from Amazon Mechanical Turk ($N = 220$; 51.8% female; $M_{\text{age}} = 36.7$; see MDA) participated in exchange for a nominal fee and were randomly assigned to one of four conditions in a 2 (celebrity contagion: contact vs. no contact) \times 2 (outcome: success vs. failure) between-subjects design. Participants read about a consumer (Steven, henceforth) who recently bought a putter at a celebrity auction held by a major golf retailer. Contagion was manipulated using a contact manipulation adapted from Newman et al. (2011). Specifically, participants in the contact condition read that the putter was used by Tiger Woods during the 2000 season, whereas those in the no contact condition read that Tiger Woods purchased the putter for the 2000 season but had never used it or even taken it out of the packaging (Newman et al., 2011). The 2000 golf season was chosen given that Tiger Woods won multiple championships that year and is generally believed to have been at the peak of his game.

In an effort to ensure that the contact manipulation worked as intended, a pretest ($N = 55$) was conducted whereby participants were randomly assigned to read one of the two contact manipulations described above and subsequently rated the extent to which the putter was imbued with an essence on three nine-point items ("This putter contains a certain essence"; "This putter embodies an essential identity"; "There is some special quality or essence that this putter embodies." anchored: 1 = *strongly disagree*, 9 = *strongly agree*; $\alpha = .97$; Newman & Dhar, 2014; Smith, Newman, & Dhar, 2015). The pretest confirmed that the putter was believed to be imbued with an essence to a greater extent when Tiger Woods used the putter ($M = 5.29$; $SD = 2.48$) compared to when he merely owned it ($M = 3.85$; $SD = 2.47$), $t(53) = 2.15$, $p < .05$, $d = .59$.

Research has demonstrated that people are more likely to engage in attributional thought processes when there is less information available (cf. Fiske & Taylor, 2013). In order to make the outcome manipulation more conservative, we designed it such that participants read about the target's performance over the course of a number of putts as opposed

to how they performed in a single, isolated act. Thus, in the success condition, participants read that after Steven purchased the putter, he tried to use it and hit his first three putts. Conversely, in the failure condition, participants read that Steven missed his first three putts. After reading the scenario, participants proceeded to the next screen where they completed the dependent measures. Similar to prior work, we adopted a measure that simply entailed making dispositional judgments about the target consumer (cf. Gilbert et al., 1988; Ross et al., 1977; Weary, Tobin, & Reich, 2001). Specifically, dispositional judgments of Steven were captured using a two-item trait ability scale: “When it comes to golf, Steven has:” (anchored: 1 = *no ability/no talent*, 9 = *a lot of ability/a lot of talent*; adapted from Landy & Sigall, 1974). This scale allowed us to determine how participants perceived Steven in response to the scenario.¹ Specifically, stronger dispositional judgments would be indicated by higher (lower) ability ratings in response to success (failure). Similar to Kramer and Block (2014), participants then reported the amount of physical contact Tiger Woods had with the putter on a single item (“Tiger Woods had a lot of physical contact with the putter;” anchored: 1 = *strongly disagree*, 9 = *strongly agree*). The questionnaire concluded by capturing basic demographic information.

Results and discussion

Manipulation check

A two-way ANOVA on perceived contact as a function of contagion and outcome revealed a significant main effect of contagion such that participants inferred that Tiger Woods had a greater degree of physical contact with the putter in the contact condition ($M = 8.01$, $SD = 1.69$) compared to the no contact condition ($M = 1.64$, $SD = 1.28$), $F(1, 216) = 990.06$, $p < .001$, $\eta^2 = .82$. Critically, no other effects were significant ($ps > .50$). Thus, the contagion manipulation worked as expected.

Dispositional judgments

A two-way ANOVA on ability ($r = .95$) as a function of outcome and contagion yielded a main effect of outcome such that Steven was perceived as having more ability when he hit the putts ($M = 6.34$, $SD = 1.49$) compared to when he missed the putts ($M = 3.20$, $SD = 1.37$), $F(1, 216) = 268.24$, $p < .001$, $\eta^2 = .55$. As predicted, this was qualified by an interaction, $F(1, 216) = 4.65$, $p < .05$, $\eta^2 = .01$ (see Fig. 1). Simple effects revealed that when Steven missed the putts, he was perceived as having less ability in the contact condition ($M = 2.92$, $SD = 1.44$) compared to the no contact condition ($M = 3.48$, $SD = 1.24$), $F(1, 216) = 4.32$, $p < .05$, $\eta^2 = .02$. Furthermore, when Steven hit the putts, his perceived ability did not differ between the contact condition ($M = 6.47$, $SD = 1.33$) and the no contact condition ($M = 6.21$, $SD = 1.63$), $p = .33$.

¹ For further clarity, using two additional items, we also measured more extreme dispositional judgments relative to novice and expert levels of ability. Specifically, participants rated Steven’s golfing ability and talent (anchored: 1 = worst golfer in the world; 9 = best golfer in the world). Critically, all results were consistent and identical with the reported dispositional judgments.

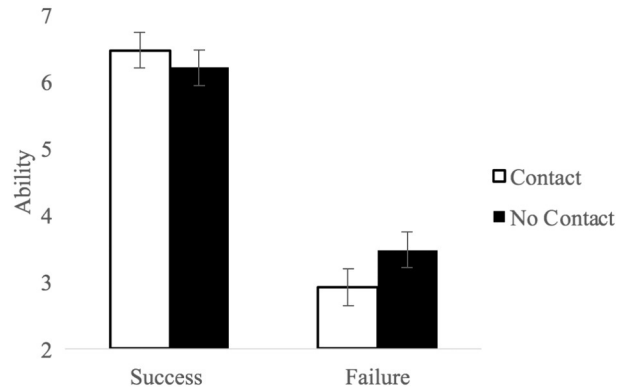


Fig. 1. Dispositional judgment results for Study 1.

These results offer initial support for our prediction that dispositional judgments about others can be biased by inferred contagion. Consistent with H1, when the target underperformed while using a putter that was previously used by a successful celebrity, observers made stronger dispositional judgments about the target relative to when the celebrity had no contact with the putter. If these effects were merely due to priming or an implicit association, we should have observed a null effect across the contagion manipulation given that Tiger Woods’ identity was made equally salient in both conditions. Furthermore, the finding that there was no impact of contagion on dispositional judgments when the target hit the putts is consistent with the premise that dispositional judgments are not impacted when the observed outcome is expected (Jones & Davis, 1965; Ross et al., 1977). Although these basic results align with our prediction that expectations are responsible for the observed interaction, they are merely suggestive in nature. Therefore, in Study 2 we sought to directly test the underlying process driving this effect.

Study 2

Study 2 was designed to test H2 and thus isolate whether the augmented dispositional judgments observed in Study 1 were due to observers’ expectations being biased by the belief that traits had transferred to the consumer via contagion. Specifically, we posit that expectations will predict dispositional judgments. This is consistent with the notion that the expectedness of someone’s behavior can impact judgments about their disposition (Hansen & Stonner, 1978; Jones & Davis, 1965; Ross et al., 1977). Finally, despite the between-subjects design, it is possible that participants in Study 1 made inferences about the quality of the putter based on whether or not Tiger Woods had used it. This raises the possibility that inferences about the putter’s quality may have also influenced expectations. Thus, Study 2 was designed to incorporate a more typical consumption scenario whereby a consumer purchases a piece of celebrity memorabilia and merely puts it on display in their home as opposed to using it. This allowed us to rule out the possibility that functional inferences about the celebrity object are influencing expectations and judgments of the consumer.

Design and procedures

A community sample ($N = 147$; 44.9% female; $M_{\text{age}} = 29.49$; see MDA) from a recreational baseball league were recruited to partake in a study at a public baseball diamond in exchange for \$20. Tables, chairs, and study materials were set up near the baseball diamond to attract participants. Participants were seated at individual cardboard voting booths and were randomly assigned to one of four conditions in a 2 (celebrity contagion: contact vs. no contact) \times 2 (outcome: success vs. failure) between-subjects design.

Participants read about a consumer (Eric, henceforth) who recently bought a baseball jersey at an auction. Specifically, all participants read that after purchasing the jersey, Eric brought it home, unpacked it, and then placed it in a display case. As in Study 1, contagion was manipulated using a contact manipulation from prior work (Newman et al., 2011). Participants in the contact condition read that the jersey was worn by Babe Ruth during the final season of his career, whereas those in the no contact condition read that the jersey was made for Babe Ruth during the final season of his career but he never used it or even opened the bag it came in (adapted from Newman et al., 2011). A pretest ($N = 60$) adopting the same essence transfer scale used in Study 1 confirmed that the jersey was believed to be imbued with an essence to a greater extent when Babe Ruth used the jersey ($M = 7.02$; $SD = 2.14$) compared to when he merely owned it ($M = 4.46$; $SD = 2.28$), $t(58) = 4.50$, $p < .001$, $d = 1.18$. Thus, the manipulation of contact facilitated the transference of an essence, as intended.

Following the contagion manipulation, participants then read that Eric plays baseball recreationally and had a game later that day. Participants in the success condition read that Eric hit a home run during the game, whereas those in the failure condition read that he only managed to get to first base once. The survey then immediately transitioned into the questionnaire.

Dispositional judgments were captured using the same trait ability scale reported in Study 1. Then, in order to capture how the target's behavior compared to participants' expectations, participants responded to two nine-point expectation items ("Please consider how Eric performed in his baseball game"; "Please consider how good Eric is at baseball" anchored: 1 = *much worse than expected*; 9 = *much better than expected*; adapted from Westbrook, 1980). Finally, participants then reported the amount of physical contact Babe Ruth had with the jersey on a single item ("Babe Ruth had a lot of physical contact with the jersey;" anchored: 1 = *strongly disagree*, 9 = *strongly agree*). The questionnaire concluded by capturing basic demographic information.

Results and discussion

Manipulation check

A two-way ANOVA on perceived contact as a function of contagion and outcome revealed a significant main effect of contagion such that participants inferred that Babe Ruth had a greater degree of physical contact with the jersey in the contact condition ($M = 5.86$, $SD = 2.98$) compared to the no contact condition ($M = 2.61$, $SD = 2.70$), $F(1, 136) = 43.76$, $p < .001$,

$\eta^2 = .24$. Critically, no other effects were significant ($ps > .32$). Thus, the contagion manipulation worked as expected.

Dispositional judgments

A two-way ANOVA on ability ($r = .83$) as a function of outcome and contagion yielded a main effect of outcome such that Eric was perceived as having more ability when he hit a home run ($M = 6.34$, $SD = 1.23$) compared to when he only made it to first base ($M = 4.30$, $SD = 1.21$), $F(1, 143) = 104.89$, $p < .001$, $\eta^2 = .41$. As predicted, this was qualified by an interaction, $F(1, 143) = 8.80$, $p < .01$, $\eta^2 = .03$ (see Table 1). In support of H1, simple effects revealed that when Eric only made it to first base, he was perceived as having less ability in the contact condition ($M = 3.91$, $SD = 1.01$) compared to the no contact condition ($M = 4.77$, $SD = 1.28$), $F(1, 143) = 9.16$, $p < .01$, $\eta^2 = .06$. Furthermore, when Eric hit a home run, ability ratings did not differ between the contact condition ($M = 6.50$, $SD = 1.22$) and the no contact condition ($M = 6.19$, $SD = 1.23$), $p = .26$.

Expectations

A two-way ANOVA on expectations ($r = .80$) as a function of outcome and contagion yielded a main effect of outcome such that Eric performed better than expected when he hit a home run ($M = 6.63$, $SD = 1.24$) compared to when he only made it to first base ($M = 4.22$, $SD = 1.17$), $F(1, 143) = 145.48$, $p < .001$, $\eta^2 = .50$. This was qualified by an interaction, $F(1, 143) = 4.19$, $p < .05$, $\eta^2 = .01$. Simple effects revealed that when Eric only got to first base, participants reported that he performed worse than expected in the contact condition ($M = 3.97$, $SD = 1.11$) compared to the no contact condition ($M = 4.52$, $SD = 1.18$), $F(1, 143) = 3.59$, $p = .06$, $\eta^2 = .02$. However, when Eric hit a homerun, expectancies did not differ between the contact condition ($M = 6.77$, $SD = 1.30$) and the no contact condition ($M = 6.50$, $SD = 1.19$), $p = .33$. To determine whether expectations mediated the combined impact of outcome and contagion on dispositional judgments, a mediated moderation analysis was conducted (Hayes, 2012; Model 8; bootstrapped with 10,000 draws). As illustrated in Fig. 2, the results revealed that the decrease in Eric's perceived ability was the result of people expecting that he would perform better after touching a celebrity-contaminated object. Specifically, there was a significant conditional indirect effect of contagion on dispositional judgments of ability through expectations when Eric only got to first base (95% CI: $-.54$; $-.01$) but not when he hit a homerun (95% CI: -13 ; $.40$).

Table 1
Means and standard deviations for Study 2.

	Failure		Success	
	Contact	No contact	Contact	No contact
Dispositional judgments	3.91(1.01) ^c	4.77(1.28) ^c	6.50(1.22)	6.19(1.23)
Expectations	3.97(1.11) ^a	4.52(1.18) ^a	6.77(1.30)	6.50(1.19)

Note: Superscript ^c shows simple effect ($p < .005$); Superscript ^a shows simple effect ($p < .07$). Standard deviations are in parentheses.

Discussion

Study 2 conceptually replicated the findings from Study 1 such that observers made stronger dispositional judgments of the target when he underperformed while using an object that was previously used by a celebrity as opposed to one that a celebrity owned but never used. Moreover, Study 2 supported H2 by demonstrating that this effect was mediated by expectations. Specifically, when the consumer underperformed, contagion resulted in lower ability ratings and this was driven by elevated expectations of performance. Importantly, ability ratings did not go up when the target performed as expected in the contact condition. This is consistent with Study 1 and prior work demonstrating that people make stronger dispositional judgments about others when their expectations are violated (Hansen & Stonner, 1978; Jones & Davis, 1965; Ross et al., 1977). In sum, these findings demonstrate that observers expect that a consumer who is observed with a celebrity-contaminated object will behave in a way that is consistent with the traits associated with that celebrity.

Study 3

Prior research has demonstrated that people differ in the extent to which they are sensitive to contagion (Haidt, McCauley, & Rozin, 1994; Rozin, Fallon, & Mandell, 1984). High trait levels of contagion sensitivity facilitate the ability of contagion to influence judgments (Newman & Bloom, 2014; Newman et al., 2011; Rozin & Wolf, 2008). For example, Newman et al. (2011) observed that an admired celebrity having physical contact with an object did not impact valuations of that object amongst those who are low in contagion sensitivity. Thus, we predict that contagion will not bias dispositional judgments of others for observers who are low in contagion sensitivity. Finally, this study was also designed to provide a conservative test of our theorizing by incorporating a contaminated object that is purely incidental to the achievement context. If people believe that an essence can transfer through mere physical contact, the vehicle that transfers the essence should be irrelevant (Rozin & Nemeroff, 2002; Kramer & Block, 2014). Stated formally,

H3. Trait contagion sensitivity will moderate the influence of contagion on dispositional judgments such that the previously stated findings will not manifest amongst those who are low in contagion sensitivity.

Design and procedures

Participants from Amazon Mechanical Turk ($N = 202$; 56.9% female; $M_{\text{age}} = 36.7$; see MDA) participated in exchange for a nominal fee and were randomly assigned to one of four conditions in a 2 (celebrity contagion: contact vs. no contact) \times 2 (outcome: success vs. failure) between-subjects design. Upon beginning the study, all participants read a short description of Warren Buffett (the celebrity). Participants then read a brief vignette about a financial advisor (Paul henceforth). We manipulated contagion using a contact manipulation similar to the previous studies. Specifically, participants read that as part of an auction (held by a liquidator of used office furniture), Paul purchased an office chair owned by Warren Buffett. In the contact condition, participants read that this was the chair Warren Buffett actually used. In the no contact condition, participants read that Warren Buffett never actually used the chair or even took it out of its packaging (adapted from Newman et al., 2011). A pretest ($N = 61$), using the same essence transfer scale as in Study 1, confirmed that the chair was believed to be imbued with an essence to a greater extent when Warren Buffett used the chair ($M = 5.43$; $SD = 2.42$) compared to when he merely purchased it ($M = 3.57$; $SD = 2.58$), $t(59) = 2.91$, $p < .01$, $d = .76$. Thus, the manipulation of contact facilitated the transference of an essence, as intended. Participants were then exposed to the outcome manipulation, where those in the success (failure) condition read that every investment Paul has made since using the chair has succeeded (failed).

Following the vignette, the survey instrument commenced with a measure of competence. We measured perceived competence given that competence is a commonly used trait in research assessing judgments of people in a professional context (Brescoll & Uhlmann, 2008; Tiedens, 2001). Thus, participants were asked to rate Paul's competence when it comes to investing on four competence items (e.g., "When it comes to investing, how competent is Paul?"; anchored: 1 = *not at all*, 9 = *extremely*; Fiske, Cuddy, Glick, & Xu, 2002). Contagion sensitivity was captured on a six item scale (e.g., "I dislike wearing used clothes because you don't know what the past person who wore it was like." anchored: 1 = *strongly disagree*, 9 = *strongly agree*; adapted from Newman et al., 2011; see MDA). Participants then reported the amount of physical contact Warren Buffett had with the chair as a manipulation check ("Warren Buffett had a lot of physical contact with the chair that Paul purchased" anchored: 1 = *disagree strongly*, 9 = *agree strongly*). The questionnaire concluded by capturing basic demographic information.

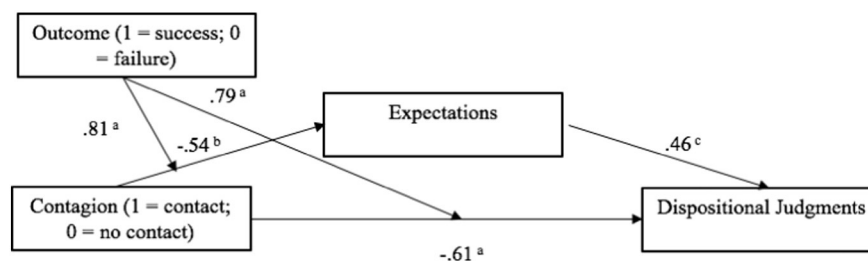


Fig. 2. Mediated moderation results for Study 2. Note: Unstandardized betas are reported with superscripts ^a ($p < .05$), ^b ($p < .07$), and ^c ($p < .001$).

Results

Manipulation check

A multiple linear regression on perceived contact as a function of contagion, contagion sensitivity, and outcome revealed a significant main effect of contagion such that participants inferred Warren Buffett had a greater degree of physical contact with the chair in the contact condition ($M = 7.98$) compared to the no contact condition ($M = 1.55$), $B = 6.42$, $SE = .23$, $p < .001$, $d = 4.04$. Critically, no other effects were significant ($ps > .20$). Thus, the contagion manipulation worked as expected.

Dispositional judgments

A two-way ANOVA on competence ($\alpha = .95$) as a function of contagion and outcome yielded a main effect of outcome such that Paul was perceived as being more competent when his investments succeeded ($M = 6.96$, $SD = 1.35$) compared to when his investments failed ($M = 3.30$, $SD = 1.37$), $F(1, 198) = 675.28$, $p < .001$, $\eta^2 = .65$. Consistent with Studies 1 and 2, this was qualified by an interaction, $F(1, 198) = 2.93$, $p = .09$, $\eta^2 = .005$. Simple effects revealed that when Paul's investments failed, he was perceived as being less competent in the contact condition ($M = 2.89$, $SD = 1.34$) compared to the no contact condition ($M = 3.69$, $SD = 1.30$), $F(1, 198) = 8.30$, $p < .005$, $\eta^2 = .04$. Conversely, when Paul's investments succeeded, competence ratings did not differ between the contact condition ($M = 6.90$, $SD = 1.29$) and the no contact condition ($M = 7.03$, $SD = 1.41$), $p = .54$. It was predicted that this interaction would vary by contagion sensitivity.

As predicted (H3), a multiple linear regression confirmed that the above interaction was qualified by a three-way interaction with contagion sensitivity ($\alpha = .72$), $B = .39$, $SE = .23$, $p = .086$, $d = .24$. As illustrated in Table 2, the nature of the three-way interaction was such that the previously observed contagion \times outcome interaction was not significant for those low ($-1SD$) in contagion sensitivity ($p = .89$). However, the interaction was robust for those high ($+1SD$) in contagion sensitivity, $B = 1.40$, $SE = .55$, $p < .01$, $d = .36$. Specifically, simple slopes for high levels of contagion sensitivity revealed that when Paul's investments failed, people reported that Paul was less competent in the contact condition ($M = 2.67$) than in the no contact condition ($M = 3.98$), $B = -1.31$, $SE = .43$, $p < .005$, $d = -.43$. Conversely, when Paul's investments succeeded, competence ratings did not differ between the contact conditions at any level of contagion sensitivity ($ps > .26$).

Discussion

The results from Study 3 lend further support to our theorizing that contagion plays a critical role in biasing judgments of consumers who have interacted with celebrity-contaminated objects. Specifically, consistent with prior work showing that contagion sensitivity facilitates the influence of contagion on judgments (Newman & Bloom, 2014; Newman et al., 2011), we demonstrate that our effect does not emerge amongst those who are low in trait levels of contagion sensitivity. Furthermore, for

those who are high in trait levels of contagion sensitivity, we replicated our previous findings.

Until now we have only examined positive sources of contagion, such as people famous for excelling in domains such as sports or investing. However, there are of course people who are infamous for committing crimes or engaging in otherwise deplorable behavior. Extant research on contagion has established that the law of contagion indeed applies to the transfer of properties from negative figures (e.g., criminals; Hood, Gjersoe, Donnelly, Byers, & Itajkura, 2011; Nemeroff & Rozin, 1994; Rozin et al., 1989). In fact, contagion exhibits what is referred to as a negativity bias whereby the effects of negative contagion are stronger than those for positive contagion (Rozin & Nemeroff, 2002). In Study 4 we sought to explore our effect in the context of negative contagion to test if an object used by an infamous celebrity is also capable of biasing dispositional judgments of someone who subsequently comes into contact with it.

Study 4

Study 4 was designed to extend our findings in a number of ways. First, this study used an infamous celebrity to test whether negative contagion also biases dispositional judgments of others. A typical way in which someone can be viewed as a negative source of contagion is to have engaged in immoral behavior. Indeed, moral character is also believed to transfer in accordance with the law of contagion (Hood et al., 2011; Nemeroff & Rozin, 1994). Therefore, we also sought to examine whether the impact of contagion on dispositional judgments extends beyond abilities and manifests in the moral domain. Furthermore, all of our previous studies explored instances where the target had

Table 2
Multiple linear regression results for dispositional judgments in Study 3.

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Outcome	3.64	.19	19.04	.00
Contagion	-.47	.19	-2.49	.01
Contagion sensitivity (CS)	.08	.06	1.40	.16
Contagion \times outcome	.74	.38	1.93	.05
Contagion \times CS	-.04	.11	-.36	.72
Outcome \times CS	.13	.11	1.16	.25
Contagion \times outcome \times CS	.39	.23	1.72	.086

Conditional effect of contagion \times outcome interaction at values of CS

	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
$-1SD$ contagion sensitivity	.07	.53	.14	.89
<i>M</i> contagion sensitivity	.74	.38	1.93	.05
$+1SD$ contagion sensitivity	1.40	.55	2.55	.01

Contagion on dispositional judgments at values of outcome and CS

Contagion sensitivity	Outcome	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
$-1SD$	Fail	-.45	.37	-1.21	.23
$-1SD$	Succeed	-.37	.39	-.95	.34
<i>M</i>	Fail	-.88	.28	-3.11	.002
<i>M</i>	Succeed	-.14	.26	-.53	.59
$+1SD$	Fail	-1.31	.44	-2.98	.003
$+1SD$	Succeed	.09	.33	.29	.77

Note. Unstandardized regression coefficients are reported. CS scores were mean centered and categorical variables were binary coded.

intentionally sought out, acquired, and sometimes even used a celebrity object. Given that physical contact is sufficient to activate beliefs about contagion, mere incidental contact should also bias dispositional judgments (Nemeroff & Rozin, 1994; Rozin & Nemeroff, 2002). Finally, in the previous studies we only manipulated contact on the celebrity's side (i.e., whether or not the celebrity touched the object that the target consumer later acquired). Thus, in order to manipulate contagion at an alternate point of contact, in Study 4 we altered whether the target had contact with a celebrity-contaminated object.

Design and procedures

Participants from an online panel ($N = 126$; 46.8% female; $M_{\text{age}} = 34.6$; see MDA) were recruited in exchange for a nominal fee and randomly assigned to one of four conditions in a 2 (target contact: contact vs. no contact) \times 2 (behavior: moral vs. immoral) between-subjects design. All participants read a vignette about a man named Paul who works at a museum. Participants read that Bernie Madoff's jacket arrived at the museum so it could be included in an exhibition. Bernie Madoff was selected because he is a convicted criminal and therefore a negative figure associated with immoral behavior. Participants in the contact condition read that Paul unpacked Bernie Madoff's jacket then put it on display. Those in the no contact condition read that Paul merely saw the jacket sitting on a table then returned to his office. Then participants read that, while on his way home after work, Paul saw someone drop a \$100 bill onto the sidewalk. In the moral behavior condition, he gave the money back whereas in the immoral behavior condition, he kept the \$100 bill for himself. Participants were then asked "How morally bad or good is Paul?" (anchored: 1 = *extremely bad*; 9 = *extremely good*) and to "Evaluate Paul's moral character" (anchored: 1 = *extremely immoral*, 9 = *extremely moral*; Jarudi, Kreps, & Bloom, 2008; Pepitone & DiNubile, 1976). Degree of contact with the jacket (anchored: 1 = *none*, 9 = *a lot*) was captured on a single item: "How much contact did Paul have with the jacket that was delivered to the museum?" The questionnaire concluded by capturing basic demographic information.

Results and discussion

Manipulation check

A two-way ANOVA on perceived contact revealed a significant main effect of target contact such that those in the contact condition perceived the target to have had greater contact with Bernie Madoff's jacket ($M = 7.53$, $SD = 1.70$) than those in the no contact condition ($M = 3.61$, $SD = 2.10$), $F(1, 122) = 127.45$, $p < .001$, $\eta^2 = .51$. No other effects were significant ($ps > .28$). Therefore, the target contact manipulation worked as expected.

Dispositional judgments

A two-way ANOVA on dispositional judgments ($r = .91$) as a function of target contact and behavior yielded a main effect of behavior such that Paul was perceived as being more moral

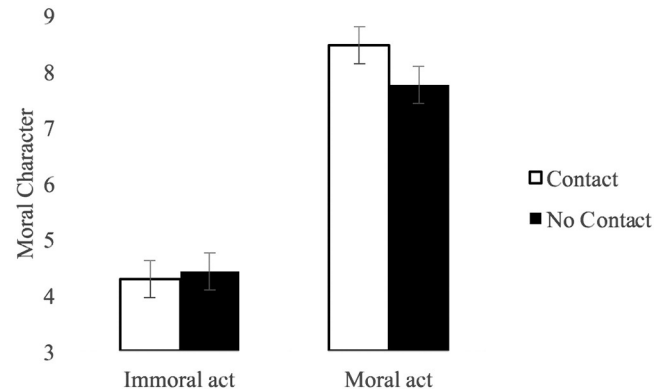


Fig. 3. Dispositional judgment results for Study 4.

when he returned the money ($M = 8.08$, $SD = 1.29$) compared to when he kept it ($M = 4.37$, $SD = 1.36$), $F(1, 122) = 254.94$, $p < .001$, $\eta^2 = .67$. As predicted, this was qualified by an interaction, $F(1, 122) = 3.15$, $p = .078$, $\eta^2 = .03$ (see Fig. 3). Simple effects revealed that when Paul returned the money, he was perceived as being more moral when he touched Bernie Madoff's jacket ($M = 8.46$, $SD = .82$) than when he did not touch the jacket ($M = 7.76$, $SD = 1.52$), $F(1, 122) = 4.36$, $p < .05$, $\eta^2 = .03$. Furthermore, when he kept the money, target contact did not impact dispositional judgments ($M_{\text{contact}} = 4.29$, $SD = 1.58$ vs. $M_{\text{no contact}} = 4.43$, $SD = 1.16$), $p = .68$. This result conceptually replicates our previous findings and demonstrates our effect in response to negative contagion and as it applies to the contagious transfer of an immoral celebrity's essence. This is consistent with our theorizing given that contagion would have set an expectation of immoral behavior and the target keeping the found money would have merely confirmed that expectation. More importantly, in support of H1, when someone touched an object that was used by a famous criminal and subsequently engaged in moral behavior, they were perceived as being especially moral compared to when they had no contact with the contaminated object.

Being contaminated by the essence of an undesirable person is generally regarded as a negative experience (Rozin & Nemeroff, 2002). In this light, contamination can have negative social consequences due to the social avoidance that emerges even when actual contamination is highly unlikely (Rozin, Markwith, & McCauley, 1994; Rozin et al., 1992). However, these findings offer the first evidence of an instance where having contact with a product imbued with a negative essence may be advantageous. These results therefore highlight a novel social benefit of being contaminated.

General discussion

Beliefs about contagion influence the valuation of ordinary objects that have come into contact with celebrities (Newman & Bloom, 2014; Newman et al., 2011). Across four studies, we demonstrate that judgments about consumers who have interacted with a celebrity-contaminated object are impacted by the way in which their subsequent behavior relates to the traits associated with the celebrity. Specifically, when a consumer

behaves in a way that is inconsistent with the traits associated with the celebrity, observers make stronger dispositional judgments about the consumer compared to when the celebrity had no contact with the object. This occurs because contact with a celebrity-contaminated object sets expectations about consumers' subsequent behavior. Critically, in further isolating the role of contagion, we find that the relationship between interacting with a celebrity-contaminated object and subsequent behavior does not augment dispositional judgments amongst observers who are low in trait levels of contagion sensitivity.

People readily make inferences about others based on the products they own (Bellezza et al., 2014; Miller, 2009; Shavitt & Nelson, 1999). It is in this sense that products often come to resemble signals that convey information to others (Dunham, 2011; Miller, 2009). By drawing on contagion theory, we offer novel insights to the literature on signaling in consumption. Specifically, our results indicate that the essence of an object's previous user is incorporated into the signal that observers receive. Consistent with the law of contagion, observers only appear to incorporate the previous user's essence when contact occurs. Thus, building on prior work suggesting there may be a social aspect to owning contaminated objects (cf. Bloom, 2011; Di Muro & Noseworthy, 2013; Newman et al., 2011), we introduce contagion to the signaling and person perception literatures.

Although prior research has identified contagion as an underlying belief motivating the acquisition of celebrity-contaminated objects (Newman & Bloom, 2014; Newman et al., 2011), little is known about the social implications of owning such objects. Prior work has dominantly focused on how an individual's *own* behavior is affected by contagion (Kramer & Block, 2014; Morales & Fitzsimons, 2007; Rozin et al., 1992). By construing consumers as recipients of contagion, our findings offer new insights to the scant research investigating how observed others are impacted as a result of being contaminated. As a whole, this work offers unique insights into the social implications of owning and interacting with celebrity-contaminated objects.

Our findings also have implications for the literature on the attributional augmenting and discounting literature. Specifically, we present a novel cue capable of eliciting augmentation, which refers to the tendency to augment the significance of a cause when others behave inconsistently with what onlookers expect (Kelly, 1972). Although a substantial body of research suggests that people can discount the extent to which they believe a person's disposition is responsible for their behavior (e.g., when other explicit explanations arise; c.f. Morris & Larrick, 1995), considerably less research has investigated factors that augment dispositional judgments (e.g., Hansen & Hall, 1985). Our results add to this literature by demonstrating that contagion can elicit augmentation when the target behaves inconsistently with the traits associated with the source of contagion.

Of course, there are limitations to the current work and questions that remain unanswered. One question relates to the information that is drawn upon to comprise a person's essence. People are of course complex and any individual can be viewed

as possessing varying degrees of a wide variety of traits. For example, someone may be equally well known for excelling in the realm of athleticism and exhibiting less than admirable moral standards in their personal life. Indeed, Newman et al. (2011) have spoken to the "mixed" valence of many well-known individuals. Future research could seek to establish the factors that determine which specific attributes are perceived to transfer by way of a celebrity-contaminated object. Another question that we feel warrants further investigation is whether the magnitude of success or failure impacts dispositional judgments emerging in response to contagion. Given that contagion impacts judgments through nonconscious processes (Rozin & Nemeroff, 2002), we believe the expectations set by contagion are valenced intuitions about what might occur in the future. However, it seems plausible that an outcome could be so extreme that it violates expectations despite being consistent in terms of valence. Therefore, an interesting avenue for future research would be to manipulate the severity of the outcome to investigate whether it would either override or further augment the effect of contagion on dispositional judgments.

In this research, we also explored whether our effect had a downstream impact on consumption. For example, would observing another consumer fail while using a putter that Tiger Woods used impact whether the observer would like to try that putter? As a further inquiry, we investigated the impact of contagion and outcome on the perceived resale value of Babe Ruth's jersey. Our analyses did not reveal any significant interactions for these dependent variables. In particular, making stronger judgments about a target consumer who underperforms relative to (contagion influenced) expectations does not appear to manifest in strong judgments about the contaminated object's value or desirability. Although null effects should be interpreted with caution, there are a number of potential reasons why our effect did not impact these downstream consumption variables. We believe the most plausible explanation is that consumers simply do not turn to the celebrity-contaminated object to make sense of the observed expectancy violation. Consistent with this, the perceived resale value of Babe Ruth's jersey in Study 2 was not impacted by the target consumer's performance (i.e., the perceived resale value of the jersey Babe Ruth used was always higher than the one he did not use). This suggests that Babe Ruth's essence maintained despite the target underperforming after touching it. Ultimately, it may be sufficient to reflect on the target's disposition in order to make sense of the expectancy violation, as we found across our studies. Although we did not observe any downstream consumption related effects, we believe our identified effect on dispositional judgments remains an important addition to the extant research demonstrating that consumers' purchases can influence how they are judged by others (Haire, 1950; Miller, 2009; Shavitt & Nelson, 1999).

Appendix A. Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.jcps.2016.09.005>.

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