GREEN JAY MANUSCRIPT REVIEW HISTORY
REVIEWS (ROUND 1)

Editor Decision Letter

Thank you for submitting your manuscript to JCR. The paper was read by three reviewers, an associate editor and by me.

My decision is to invite a risky revision. I am aligned in my thinking with the associate editor, so I shall not complicate your task by adding to the very clear guidance in the AE report beyond adding my endorsement on one point. Movie box office data by geographic market is I think easy to obtain, so why not strengthen your set-up by reporting, at least descriptively, some box office results by genre and season?

If you revise I shall ask the present team to stay with the paper, so revision notes would be a good idea.

Let me know if any clarifications are needed.

AE Report

Comments to the Authors:

The reaction to the manuscript from the review team is somewhat mixed. While each of the reviewers indicates interest in the research question and findings you pursue, there are conflicting feelings on how to move this manuscript forward in the process. Reviewer A and B are perhaps more positively predisposed to the research, while Reviewer C provides the toughest critique. In weighing the concerns across all reviewers, my view is that the manuscript needs significant refinement in all areas. I will detail below what this means in my mind.

Foremost, each reviewer calls for a better theoretical set-up in building your story. Reviewer A indicates a broad confusion with the articulation of the theory and points to a number of alternate explanations for the studies presented. This reviewer points to a potential inconsistency between the first three studies and the final study with respect to how “coldness” would be interpreted by participants (given the temperature manipulation across study groupings). The simplicity of the discussion (that this reviewer points to) betrays you at some level as the deeper meaning behind the manipulations and what they actually deliver isn’t really explicated. Reviewer C pushes you in a parallel manner. This reviewer provides a listing of how the theoretical framing falls down. A call for a more comprehensive treatment of the literature, a better explanation of the
“embodied” nature of the effect, and the need to more effectively link body-based cognition with romance movies/psychological warmth is made. This reviewer essentially pushes you to do a better job of fitting the phenomenon you identify to an embodied cognition framework. Reviewer B gives you something additional to think about. This reviewer raises the possibility that the literature addressing “feelings-as-information” might have strong applicability to the phenomenon you identify. The arguments made by this reviewer are certainly of interest and you should give consideration to how (or if) you want to integrate this literature into your storyline. I actually began to wonder if this literature might provide an alternate way to approach the story in general - something to consider perhaps.

In sum, the overlap across reviewers is simply a call for a tighter and more refined theoretical story. You need to meet this challenge in revision.

The second large issue to address in the revision centers in the empirical work you present. The review team accepts the initial studies (albeit with some serious question marks on what the manipulation achieves), but there are significant concerns with respect to Study 4 (Reviewer A and C). Reviewer A asks for more explication in this study. Reviewer C again holds a harder line and points to a number of limitations and problems with the methodology pursued in this study. Some of these issues (a-f) probably cannot be addressed, but others might be something you can tackle in revision (e.g., point d). Given the tradeoffs involved in field data, I don’t feel perfection is required for study inclusion. However, I agree with these reviewers - I think you need to tighten the analysis in the 4th study and respond to the criticisms levied.

Finally, the need for new data is an open question. You may decide that additional data collection can solve some of the problems expressed, or perhaps some of the suggestions on additional empirical approaches (e.g., Reviewer A – box office receipts, reviewer C – point 4. – watching a romantic clip) will enable you to realize a more convincing and complete story. I am not going to mandate that additional data are required. To me, the manuscript needs to simply provide a more robust story and effectively “win” over the entire review team. If additional empirical work helps you get there – so be it. Good luck with moving this research forward!

Reviewer A

Comments to the Authors:

The authors argue that people will seek out the psychological warmth of romantic movies when physically cold (because they are drinking iced tea) or living in a physically cold season. My intuition is that this is simply not true, but the evidence is sufficiently compelling for me to at least question my intuition. That is the mark of an interesting paper. I have some concerns of course, but as I look over my notes I recognize that none are able to overcome the burdens of parsimony. With that peculiar version of endorsement in mind, let me describe my largest concerns.

In the first three studies I would argue that there is room for a different interpretation of the effects. Hot tea is a relatively stodgy and traditional beverage (I am stodgy and traditional, so that is not meant pejoratively). Perhaps people drinking feel like they need to express preferences
that make them feel less stodgy? My guess is that an endorsement of action movies or comedies appears more youthful. In Study 2 I would argue that the observed moderation could easily be interpreted not as “the effect is limited to people who associate romantic movies with warmth” but rather “people who associate romantic movies with anything.” That is to say, my prediction would hold up so long as those people who were likely to thin romantic movies are warm are also likely to think that romantic movies are stodgy.

Here is where parsimony does me no favors however; the above analysis does not do a lot to explain Study 4. On the other hand, Study 4 simply needs more explication from my perspective. I will raise an objection that is partially handled with the existing control variables, but certainly not completely. The authors control for holidays with dummies for the 12 months of the year. That feels imperfect; February is not a romantic month, but February 14 is certainly a romantic day. I would like to see a slightly more detailed reporting of findings at least; confirm that romantic movie rentals do peak around relevant holidays (independent of temperature).

Independent of these methodological subtleties, I have a more broad confusion about the precise articulation of the theory. Namely, when should the handling of a cold object make people want to be warmer and when will it make them perceive things more coldly? Williams and Bargh (2008), for example, judge people as more cold after holding the iced coffee. The direct inference here would be that people would judge romantic movies to be LESS warm after holding the iced tea. That seems roughly at odds with the authors’ explanations. There are basically two temperature manipulations in the paper: tea (Studies 1-3) and season (Study 4). First, consider the former. A cup of iced tea is certainly colder than a cup of hot tea, but every extension of that physical reality gets more fuzzy. Why is it predicted that holding a cup of iced tea should make people feel physically colder? The impact on true body temperature is of course trivial, but we nevertheless see relatively large changes on the 7-point scale of personal coldness/warmth. Are people simply reporting some version of “how salient is coldness right now?” This would seem most likely in light of the second manipulation. My guess is that people make movie rental decisions indoors where it is nice and warm. In fact, I would tend to think that the person asked to estimate their personal temperature on a cold winter day might even report a HIGHER number, as a heated indoor room feels especially warm when it is freezing outside. That is to say, I would have thought that people would “feel” warmer in winter than in summer. On the other hand, coldness is likely more salient in winter than in summer. Though it is necessarily the case that the data of Study 4 are relatively impoverished, I tend to think the authors are incorrect to infer that people feel colder in the winter, and as reported, that feeling is central in the authors’ predictions.

In sum, I have mixed feelings about the paper. My first reading was pretty negative, but upon closer inspection I am a bit more open to it. I certainly find the effects intriguing. Furthermore, although I don’t really accept the presented explanation, the studies and arguments are pleasantly simple and clear. Based on what I say in the above paragraphs, there is clearly room for some empirical and rhetorical improvements, but overall I am inclined to be generally positively disposed towards publication of this paper.

A couple of smaller considerations:
• Not to push for more delving into databases, but couldn’t the authors look at temporal and geographic variation in box office receipts? Theaters publicly report ticket sales. Shouldn’t the authors predict extreme seasonal variation in North Dakota, less in Oregon, and virtually none in Hawaii? Furthermore, if a romantic movie opens on an unseasonably warm weekend, the theory predicts a measurable hit on profits (if romantic movies are only 5% of rentals when its 60 degrees outside, what would happen if the days between Christmas and New Years were full of 75 degree afternoons?). The authors make passing reference to this logic in the discussion, but it comes off as a bit slipshod when it could relatively easily be handled systematically. If the authors want to include archival data in their paper (and I think it is a nice feature), I would advocate for considering data that is a bit better suited than the movie rental data they report.

• The authors reference the Eisenberger study and might do well to detail the more recent work she has done with DeWall et al. (2010) showing that ameliorating physical pain seems to reduce “social pain”. Also, in the domain of embodied cognition in consumer behavior the authors could consider recent work by Juliet Zhu (most notably with Levav and Meyers-Levy) or by Nelson and Simmons (2009).

Reviewer B

Comments to the Authors:

This is a very well done piece of research and a very nice set of findings. Although the conceptualization could be strengthened a little (as explained below), it makes good theoretical sense and builds nicely on recent developments on embodied cognition. The studies were nicely planned and conducted, with careful attention to issues of generalizability and the ruling out of alternative explanations. Together, the studies make a very nice package, with a clear and logical progression from study to study. The final field study is very compelling and a great way of ending the paper. I think that the empirical work is already very strong and that no further studies are needed at this point.

My only and primary reservation pertains to how the authors relate (or rather fail to relate) their work to previous consumer research on feeling-as-information (see Pham 2004 for a review), which seems very relevant and related. There seems to be a lot of important parallel between the present findings and previous feeling-as-information findings:

• First, there is growing evidence that various types of feelings, whether affective or nonaffective (e.g., feeling of ease of retrieval), exert conceptually similar influences on judgments, and seem to be regulated by the same class of feeling-as-information principles (see Greifeneder, Bless et al. 2010, for a review). It is not clear why the physical (embodied) feeling of being cold would not operate along the same principles. After all, being cold is a somatic feeling experience.

• Second, study 3’s main finding—that measuring participants’ feelings of coldness before the target is evaluated attenuates their effects on judgment—is perfectly consistent with a feeling-as-information interpretation. In fact, Gorn and colleagues (Gorn, Goldberg et al.
1993) used a similar order-of-measurement manipulation and observed similar results within an affect-as-information perspective. Presumably, calling people’s attention to their feelings of coldness makes the source of these feelings salient and highlights the fact that these feelings are unrepresentative of what people want and therefore of the movies to be evaluated.

- Third, previous feeling-as-information research (Raghunathan and Pham 1999) has also established that specific feeling states (e.g., feeling sad vs. feeling anxious) often activate tacit alleviatory goals that steer preferences toward objects that could potentially offset the specific feeling state (e.g., high-reward options for sadness vs. low-risk options for anxiety). Moreover, these alleviatory goal effects have also been shown to be strongly attenuated when the source of the feeling state is made salient (Raghunathan, Pham et al. 2006)—a finding that parallels the present study 3’s finding. Therefore, the “compensatory goal-activation” effects of being cold seem to operate very much in the same way as the alleviatory goal-activation effects of specific negative affective states.

- A final set of connections is that previous feeling-as-information research also suggests two distinct ways in which feeling states can be interpreted as information (Andrade 2005). First, feeling states can be interpreted as representative of one’s reaction to or evaluation of the target object (a piece of chocolate may feel worse and therefore seem less attractive if one is in a bad mood than if one is in a good mood). Second, feeling states can be interpreted as states to be regulated and therefore as informative of what we want from the target (a piece of chocolate may be more desirable when one is in a bad mood than when one is in a good mood). What makes a feeling state being interpreted one way or the other seems to depend on a variety of factors that remain to be further clarified (Andrade and Cohen 2007; Pham 2009). According to Pham’s (2009) generalized affect-as-information model (GAIM), which interpretation emerges depends in part on task-related factors that determine the questions that people are asking themselves when inspecting their feelings (the principle of query dependency). As the authors allude to in their general discussion, it seems that feelings of coldness are equally amenable to two types of interpretations. The first would be a literal interpretation: a movie would feel less “warm” and romantic when one is feeling cold than when one is feeling warm. The second interpretation is the motivational interpretation observed in these studies: a romantic movie is seen as more desirable when feeling cold. It is possible that in the present studies the motivational interpretation dominated the literal interpretation because the judgment tasks (which involved ratings or choices across many movies) were inherently comparative. This idea is consistent with Raghunathan and Pham (1999) speculation that motivational (as opposed to literal) interpretations of feeling states are more likely when people face choices between options. One direction for future research that the authors could mention in the general discussion would be to remove the comparative/choice element of the task: for example have participants rate their enjoyment of a single romantic movie (vs. a horror movie) while feeling cold or not cold. The prediction would be that enjoyment of the romantic movie would go down when feeling cold, because feelings of coldness would then be interpreted literally. On the other hand, the effect may be the opposite for the enjoyment of a horror movie. Such results would also be conceptually similar to previous feeling-as-information results by Martin and colleagues (Martin, Abend et al. 1997).
These observations do not take anything away from the research itself and from the compellingness of its findings (which are really nice). However, for the sake of scientific progress, it is important that the research be better integrated with previous research in our field. Good luck with the paper.


Reviewer C

Comments to the Authors:

MAJOR STRENGTHS:

The basic intention of this paper – to link physical/embodied phenomena to psychological effects – is potentially very interesting. The manuscript is well-written and thought-provoking. The authors argue that physical coldness activates a desire for psychological warmth, which may stimulate consumer behaviors such as increased liking for products associated with psychological warmth: romance movies. They test their ideas in three lab experiments and a field
study. In the experiments the simple temperature manipulation (based on Williams and Bargh 2008) is a remarkably effective prime. The field study examines consumer video rentals under varying temperature conditions throughout a three-year period. The authors conclude with a discussion of theoretical and managerial implications for movie studios, distributors and movie rental companies.

MAJOR ISSUES:

Despite these merits, the contribution of this paper to our understanding of consumer behavior and to embodied cognition is still unclear. The results appear to support some of the authors’ main claims, but embodied cognition might suggest other effects that are not found in the studies, raising doubts about the embodied explanation. The paper would benefit from a tighter explanation of how embodiment applies to this phenomenon or from an alternative theory if it can better account for the findings. The field study meant to establish external validity is especially problematic due to key limitations of the data source. In sum, this research could be better positioned for a consumer research audience by addressing the following concerns:

1. Build a better bridge between the current literature base of the paper and the existing body of consumer research knowledge. Consumer research has extensively investigated sensory (Krishna et al. 2010; Peck and Childers 2008), haptic (Peck and Childers 2003), and other body-related phenomena (Joy and Sherry 2003; Myers-Levy et al. 2010; Rosa et al. 2006; Venkatesh et al. 2010), even if they were not always considered to involve cognitive processes. How does the current paper tie into this existing knowledge base, and how does it add to it? Of the 36 works cited in the paper, only two are from *Journal of Consumer Research* (one from 1986, the other from 2007) and none from *Journal of Consumer Psychology*. There have been many articles from these and related journals and conference proceedings that could inform the current paper.

2. What specifically about the phenomenon investigated here is “embodied”? Are the authors using embodiment as a metaphor (cognitive linguistics), are they referring to actual physiological processes (neuroscience), or are they suggesting a direct link to real or imagined body movement and physical interaction (e.g., Glenberg 1997)? Since the authors cite Barsalou (2008) as the primary source for embodied cognition, they should consider the more detailed theory presented in Barsalou (1999), then ask: What is the role of perceptual symbols and mental simulation in the phenomenon they are investigating? See Malter (1996) for an early overview of the theories of Barsalou and Glenberg and implications for consumer research. Kreuzbauer and Malter (2005) provide an example of how perceptual symbols can help understand categorization and product design.

3. A key unanswered question in the current paper is how body-based cognition is tied to the assumed association between romance movies and psychological warmth (p.3, line 9). This link is an important assumption in the paper but is not explicitly established. It is critical to understanding why the effect of temperature is limited to romance movies and does not appear to affect other genres, even though the latter also involve physical themes (e.g., action, horror/thriller, romantic comedy, though it’s not clear if the latter is distinct from romance).
4. The authors review literature (p.6) that attempts to link physical temperature with romance and psychological warmth, but it’s not clear that romance movies induce any greater feelings of physical closeness or warmth than any other genre. If true, then other forms of romance art, e.g., novels, should have the same effect. They note that a commercial about love or physical attraction could induce a feeling of warmth (Aaker et al. 1986) but feature-length romance movies, in contrast to a short television commercial, often involve a range of emotions including betrayal and heartbreak. The lab experiments would be more compelling if the participants actually watched the listed movies (or at least clips) rather than just reading descriptions and reviews and then reporting their desire to see each movie.

5. Overall, the authors should more closely examine the claims of embodied cognition theories, notably that cognitive and perceptual processes are part of the same unified system, not different systems that somehow interact, operate at different levels of consciousness, under different conditions or for different purposes (as the authors suggest in the discussion on p.24). The concept of a unified cognitive-perceptual system is a central tenet of theories of embodied cognition (e.g., Barsalou 1999; Glenberg 1997).

6. The field test in Study 4 of the relationship between historical temperature data and online movie rentals is potentially the most interesting of the four studies but also the most problematic due to several methodological limitations.

   a. First, it is hard to generalize about movie tastes from only online video rentals since they do not capture other forms of movies watched at home (e.g., consumers own some movies, borrow from public libraries, watch movies on broadcast, cable or on-demand TV, or download from the Internet), or movies watched outside the home (movie theaters, where the air conditioning may be a major attraction on hot summer days and thus influence movie tastes). Do at-home rentals represent movie consumption patterns from all sources?

   b. Second, the particular data source used in Study 4 appears to be a small company that imposed a monthly rental quota and offered a limited movie inventory during the study period. The movie inventory appears to have been very small at the beginning of the study period.

   c. All the geographically identifiable customers were in one unnamed location (near the company headquarters) which greatly limits the amount of weather variation across seasons that would have provided a richer pattern of data. Data from different regions could help rule out alternative explanations. For example, if the authors are correct, per capita consumption of romance movies should be higher all year round in Minneapolis compared to Phoenix or Miami. Similarly, there should not be any seasonality in consumption of romance movies in places with little temperature variation such as Singapore or Bogota (though residents there may perceive a “summer” and “winter” season that affects consumption of certain products). And if the effect were truly embodied, it should be culturally invariant, i.e., consumers in the same latitude should consume the same proportion of romance movies in the
respective hot/cold seasons in the northern and southern hemispheres. It would be harder to obtain data from such geographically diverse sources, but such testable propositions would provide a stronger test of the proposed theory.

d. The authors used average monthly temperature data, which does not seem precise enough to adequately test the theory. What was the annual temperature range and monthly variation in the study location? Sixty degrees could be perceived as warm in Minnesota but cold in Arizona or Florida. Relative temperature change may also be more important than absolute temperature: For example, 60 degrees will feel relatively warmer (colder) if the temperature on the previous day or week was colder (warmer).

e. The authors could also not precisely identify when the movie “consumption” occurred. This is a serious limitation given the study objective to link the consumption of a specific genre with specific temperature conditions (especially if they did have more detailed temperature information, as recommended above). A diary panel would give better precision as to the exact time of consumption and allow for recording of all possible sources of movies.

f. The authors find that only romance movie rentals have a significant relationship with temperature (p.22). This is actually troubling for the embodiment hypothesis: Why is there not a seasonal demand for other genres that involve physical action, such as action or thriller movies? And why would demand for romance movies differ from romantic comedies? If the mind is embodied, the embodied effects should not be limited to a single movie genre or sub-genre, but should generate theoretically consistent and predictable effects on different genres.

Minor Issues:

1. page 2, footnote 1: the authors should give the dates of the listed holidays for non-U.S. readers who may not be familiar with the American holiday calendar.

2. Not all consumers seek immediate warmth in response to cold temperatures. For example, many people enjoy winter sports in freezing temperatures, or sitting for hours in cold temperatures to watch their favorite sports team play instead of sitting at home and watching on TV.

3. It appears from the industry and experimental data that romance movies have a small market share and are the least liked genre of those tested. The effect of temperature on movie consumption would be more managerially relevant if it affected a more well-liked and commercially important genre.

4. Were there differences in the liking of romance movies by gender? The gender composition is not reported for any of the samples but could be significant.
5. Was there an effect of ambient temperature during the experiments, in the lab or outside? (I hope the experimenters recorded the temperature). What time of year and in what location were the data collected? For example, in some climates and seasons, students might come to the lab in shorts and flip-flops while in other places students might be wearing sweaters and Ugg boots. These are important details for the research question of interest.

6. In study 2, it’s not clear why only romance movies were tested in the preference task. It’s possible that other genres, such as comedy, could be linked to psychological warmth.

7. In study 2, it seems odd to run a model to predict mood (p.13). It would make more sense to test whether mood or temperature or both predict the perceived association between romance movies and psychological warmth.

8. In study 3, it’s not clear why explicit awareness of physical coldness should influence the liking of romance movies. The authors repeatedly state that making physical coldness salient would lead participants to “correct” for this influence, but the discussion on pages 17-18 seems speculative at best, in the absence of participant statements that they were indeed trying to compensate. Why would they feel a need to “correct” anything? What part of embodied cognition (or any other theory) would predict such an effect?

9. The description of the results of study 3 (p.17) as replicating the results of study 1 (using the same procedure) raise a concern that perhaps the movie preference task influenced the perception of coldness (rather than the authors’ explanation that the salience of physical cold nullified the effect of physical coldness on liking of romance movies). Could it be that the thought of romance movies leaves one feeling cold afterwards? It’s hard for the reader to assess because it’s not clear how the authors used the perceived coldness data in the analysis of Study 1.

10. The suggestion in the concluding discussion (p.23) that physical coldness should lead to a willingness to pay a higher price for products associated with psychological warmth is interesting. Did the authors run this experiment?

11. On p.25, the authors question the wisdom of releasing romance movies in summer if the winter releases generate higher opening week box office revenue. However, the studios may want to spread new releases of each genre throughout the year. In fact, summer releases of new romance movies should later become the winter movie rentals that the authors argue are more preferred.

In sum, the topic is interesting but the studies and paper can be further improved.

REFERENCES


