

Does More Advice Help? The Effects of Second Opinions in AI-Assisted Decision Making

Supplemental Material

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1 DATA AND ANALYSIS CODE

The data and analysis are published on the GitHub repository <https://github.com/ZhuoranLu/Second-Opinion-HAIDM>.

2 EXPLORATORY ANALYSIS IN EXPERIMENT 1

2.1 Do people rely on peers more than AI?

One plausible explanation for why the presence of peer-generated second opinions results in people's decreased over-reliance and increased under-reliance on AI is that in the presence of both AI recommendations and peer opinions, people tend to trust humans more. As a result, people may rely on the peer-generated second opinions more than the AI recommendation; the more the peers disagree with the AI model, there are more tasks on which they may switch from relying on the AI model to relying on the peers. To test this hypothesis, for each subject in a treatment with second opinions, we compute their *peer reliance* as the chance for their decision to be the same as the second opinion generated by the peers. We find that on average, a subject in Treatments 2, 3, or 4 relied on their peers on 68%, 56%, and 53% of the tasks (one-way ANOVA: $F(2, 6537) = 58.9, p < 0.001$), which is inconsistent with our expectation that peer reliance will increase with the disagreement between peers and AI. Meanwhile, as shown in Figure 2a in the main paper, an average subject in the same three treatments relied on the AI model on 69%, 67%, and 64% of the tasks. Paired t-tests on each of these three treatments show there is no significant difference between subjects' reliance on the AI model or on peers in Treatment 2 (high agreement), but subjects relied on the AI model significantly more than on peers in Treatment 3 (medium agreement, $t(1999) = 7.52, p < 0.001$) and Treatment 4 (low agreement, $t(2219) = 6.13, p < 0.001$). In other words, these results do not support the hypothesis that the findings of our Experiment 1 are simply caused by decision makers relying on peers more than on the AI model.

2.2 How do people perceive the capability of the AI model, peers, and themselves?

To gain further insights into the reasons behind our findings, we look into subjects' self-reported estimates of the AI model's, the peers', and their own decision accuracy in the exit-survey. Interestingly, we find that in the control treatment, 47.5% of the subjects estimated the AI model's accuracy to be lower than their own accuracy, while this percentage is 51.7%, 55%, and 65% for subjects in the treatment with high, medium, and low agreement peers, respectively. A proportion test shows that the difference in the fraction of subjects who believed the AI model was less accurate than themselves across the four treatments is marginally significant ($p = 0.067$). Meanwhile, when looking into the three treatments with peers, we find that the fractions of subjects who believed the peers were less accurate than themselves were 50%, 46%, and 55% for the treatment with high,

medium, and low agreement peers, respectively, yet the difference in the fractions across the three treatments is not significant.

Together, these results imply that the presence of second opinions appears to make people become aware of the AI model's limited performance. Moreover, changes in the level of agreement between the peers and the AI model are more likely to affect people's perceptions of the AI model's accuracy rather than the peers' accuracy. There is a trend that lower levels of agreement between the AI model and the peers are associated with a higher chance for decision-makers to perceive the AI model as inaccurate compared to themselves. This trend may have contributed to people's decreased reliance on the AI model on both tasks where the AI is correct and incorrect. Moreover, as people perceive the AI to be less accurate, they may decide to spend more time deliberating the decisions to make on the tasks *themselves*. Such increased "ownership" of their decisions may further lead to people's higher confidence in their decisions when they can tell their decisions are correct.

3 DETAILED POST-HOC ANALYSIS OF RELIANCE IN EXPERIMENT 2

The design of Experiment 2 leads to 5 treatments in total:

- **Treatment 1 (Control):** subjects in this treatment were not presented with any second opinions.
- **Treatment 2 (High agreement–AI source):** subjects in this treatment were presented with second opinions from high agreement peers, and these second opinions were described as being generated from another AI model.
- **Treatment 3 (High agreement–human source):** subjects in this treatment were presented with second opinions from high agreement peers, and these second opinions were described as being generated by another peer crowd worker.
- **Treatment 4 (Low agreement–AI source):** subjects in this treatment were presented with second opinions from low agreement peers, and these second opinions were described as being generated from another AI model.
- **Treatment 5 (Low agreement–human source):** subjects in this treatment were presented with second opinions from low agreement peers, and these second opinions were described as being generated from another peer crowd worker.

Here, we report our post-hoc Tukey HSD test results to identify pairs of treatments that show significant differences on metrics of decision-makers' reliance on AI. First, the presence of second opinions in experimental treatments with both peer-generated and AI-generated second opinions leads to a decrease in subjects' overall reliance compared to subjects with no second opinions (High agreement–AI source vs. Control: $p < 0.001$, Cohen's $d = 0.16$; High agreement–human source vs. Control: $p < 0.001$, Cohen's $d = 0.14$; Low agreement–AI source vs. Control: $p < 0.001$, Cohen's $d = 0.24$; Low agreement–human source vs. Control: $p < 0.001$, Cohen's $d = 0.22$). Similarly, in all but Treatment 2, the presence of second opinions leads to a reduction in subjects' over-reliance compared to subjects in the Control treatment (High agreement–human source vs. Control: $p = 0.048$, Cohen's $d = 0.18$; Low agreement–AI source vs. Control: $p < 0.001$, Cohen's $d = 0.32$; Low agreement–human source vs. Control: $p < 0.001$, Cohen's $d = 0.25$). At the same time, both AI-generated and peer-generated second opinions in experimental treatments result in a higher level of under-reliance on AI (High agreement–AI source vs. Control: $p < 0.001$, Cohen's $d = 0.18$; High agreement–human source vs. Control: $p = 0.007$, Cohen's $d = 0.13$; Low agreement–AI source vs. Control: $p < 0.001$, Cohen's $d = 0.21$; Low agreement–human source vs. Control: $p < 0.001$, Cohen's $d = 0.21$). Finally, in all experimental treatments, subjects appear to have a lower level

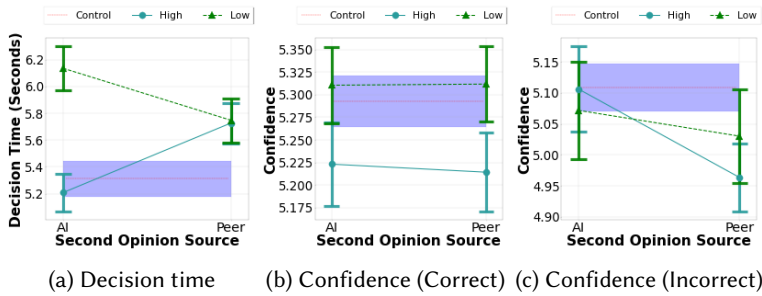


Fig. 1. The effects of second opinions from peers on subjects’ decision time (1a), confidence in their correct decisions (1b), and confidence in their incorrect decisions (1c) across treatments. Error bars represent the standard errors of the mean.

of decision accuracy than those in the control treatment, and subjects in the “High agreement–AI source” and “Low agreement–human source” treatments performed significantly worse than subjects in the control treatment (High agreement–AI source vs. Control: $p = 0.012$, Cohen’s $d = 0.10$; Low agreement–human source vs. Control: $p = 0.044$, Cohen’s $d = 0.085$).

In sum, second opinions generated by both another AI model and by peers reduce people’s overall reliance and over-reliance on AI, but they also cause a higher level under-reliance on AI.

4 ANALYSIS OF DECISION TIME AND CONFIDENCE IN EXPERIMENT 2

4.1 Decision Time

Figure 1a shows subjects’ averaged decision time spent on tasks across treatments in Experiment 2¹. Overall, we can see that the provision of second opinions does lead to a variation in subjects’ decision time, and the one-way ANOVA test confirms the difference in decision time is significant across treatments ($F(4, 9817) = 6.06, p < 0.001$). Post-hoc Tukey HSD test further show that subjects in the “Low agreement–AI source” treatment spent significantly longer time in completing the decision making tasks than subjects in the control treatment ($p < 0.001$, Cohen’s $d = 0.12$).

We further conducted a two-way ANOVA analysis on decision time among the four experimental treatments with second opinions. We found a significant interaction ($F(1, 7644) = 8.35, p = 0.003$) between the source of the second opinion (i.e., AI-generated or peer-generated) and the agreement level between the second opinion and the primary AI model’s decision recommendation (i.e., high agreement and low agreement). Indeed, as shown in Figure 1a, when the level of agreement between the second opinion and the primary AI model’s decision recommendation becomes lower, subjects’ decision times appear to only increase substantially when the second opinion is claimed to come from another AI model.

4.2 Confidence

In Figures 1b and 1c, we plot the average values of subject’s confidence in their correct and incorrect decisions, respectively in Experiment 2. Although Figure 1b appears to show a similar trend as results in Experiment 1—that is, second opinions with a high level of disagreement with the AI model make people become more confident in their correct decisions—our repeated measures ANOVA test did not reveal a statistically significant difference in subjects’ confidence in their correct decisions at the level of $p = 0.05$. Similarly, for subjects’ incorrect decisions, we did not find significant differences across their confidence in the decisions, either.

¹As we pre-registered, we excluded 498 out of 10,320 records using the 95 percentile criteria.

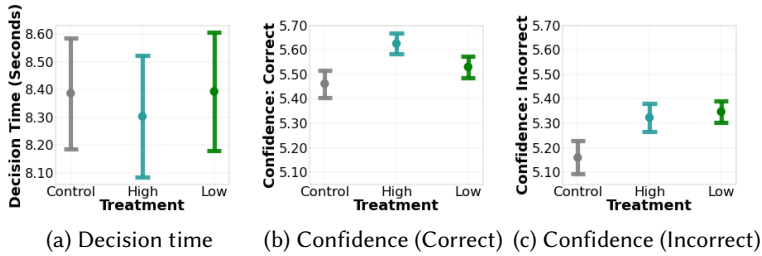


Fig. 2. The effects of the optional solicitation of second opinions from peers on subjects' decision time (2a), confidence in their correct decisions (2b), and confidence in their incorrect decisions (2c) across treatments. Error bars represent the standard errors of the mean.

5 ANALYSIS OF DECISION TIME AND CONFIDENCE IN EXPERIMENT 3

5.1 Decision Time

Regarding the amount of time subjects spent on a decision-making task², we can see from Figure 2a that there is no clear difference across treatments. In other words, having the option to solicit second opinions from peers does not significantly change people's decision making time.

5.2 Confidence

Finally, Figures 2b and 2c show the comparisons across the three treatments in terms of subjects' average levels of confidence in their decisions when they are correct and incorrect, respectively. Overall, it appears that when subjects can solicit second opinions from peers, they become more confident in both their correct and incorrect decisions. One-way ANOVA test results suggest that the differences in subjects' confidence across the three treatments are significant both for their correct decisions ($F(2, 17) = 6.86, p = 0.003$) and for their incorrect decisions ($F(2, 17) = 3.33, p = 0.047$). However, through post-hoc tests with Bonferroni correction, the only significant pair of comparison we detect is on subjects' confidence in their correct decisions, between the control treatment and the treatment where second opinions from high agreement peers are available upon request ($p = 0.018, \text{Cohen's } d = 0.75$).

6 ADDITIONAL EXPLORATORY ANALYSIS OF EXPERIMENT 3

To understand how *active solicitations* of second opinions change subjects' reliance on the AI model in our Experiment 3, we conduct exploratory analysis by matching subjects with similar demographic characteristics in the control treatment and the experimental treatment (i.e., Treatments 2 or 3), and then conduct comparisons between paired subjects. In addition to propensity score matching that we report in the main paper, we have also experimented with covariate matching, and in the following, we report the analysis results when covariate matching is used. For completeness, we also report the comparison results obtained from analyzing the raw data without applying matching methods.

6.1 Results of Covariate Matching

We focus on only those subjects who requested for second opinions from peers for at least once, and compare them with subjects in the control treatment with similar demographic characteristics, who are identified through covariate matching with the scaled Euclidean distance being used as the distance metric between data units [1].

²327 records were excluded from 6,720 records using the 95% criteria.

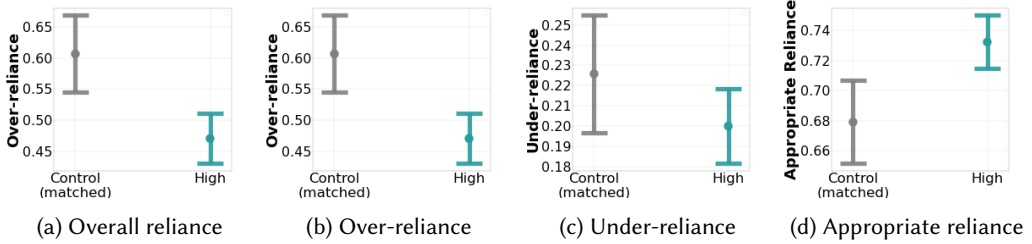


Fig. 3. The effects of active solicitations of second opinions from high agreement peers on the subjects’ overall reliance (3a), over-reliance, (3b) under-reliance (3c), and appropriate reliance (3d) on the AI model. Data for the control treatment contains only the matched subjects after applying covariate matching. Error bars represent the standard errors of the mean.

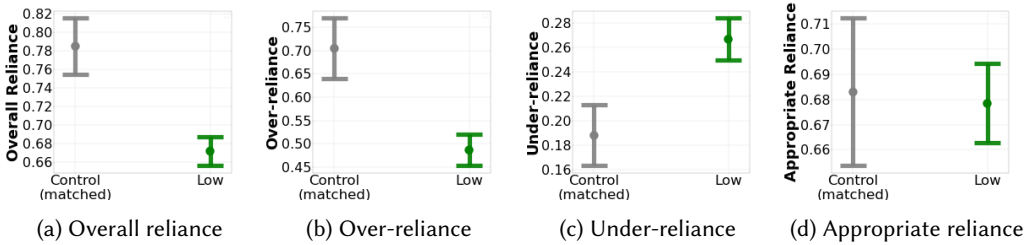


Fig. 4. The effects of active solicitations of second opinions from low agreement peers on the people’s overall reliance (4a), over-reliance (4b), under-reliance (4c), and appropriate reliance (4d) on the AI model. Data for the control treatment contains only the matched subjects after applying covariate matching. Error bars represent the standard errors of the mean.

Figure 3a–3d show subjects’ overall reliance, over-reliance, under-reliance, and appropriate reliance on the AI model, respectively, between the subjects who requested second opinions from high agreement peers for at least once and their matched subjects in the control treatment. We can see subjects’ active solicitations of second opinions from high agreement peers result in a marginal decrease in their over-reliance on the AI model (control: $M = 0.61, SD = 0.06$; high: $M = 0.47, SD = 0.05$; $p = 0.057$). Meanwhile, they do not lead to significant changes in either subjects’ overall reliance on the AI model, or their under-reliance on the AI model. Together, it appears that the active solicitations of second opinions from high agreement peers bring about a slight increase in subjects’ appropriate reliance on the AI model (i.e., a slight increase in decision accuracy), and a paired t-test suggest that the increase is marginal (control: $M = 0.68, SD = 0.05$; high: $M = 0.73, SD = 0.04$; $p = 0.092$).

Similarly, Figure 4a–4d show subjects’ overall reliance, over-reliance, under-reliance, and appropriate reliance on the AI model, respectively, between the the subjects who requested second opinions from low agreement peers for at least once and their matched subjects in the control treatment. Here, we find that the active solicitations of second opinions from low agreement peers lead to significant decreases in subjects’ overall reliance ($p < 0.001$) and over-reliance ($p < 0.001$) on the AI model, as well as significant increase in their under-reliance ($p < 0.001$), without significantly changing subjects’ appropriate reliance on the model.

6.2 Results on the Raw Data

Figure 5a–5d compare subjects’ overall reliance, over-reliance, under-reliance, and appropriate reliance on the AI model across all subjects in the control treatment (i.e., Treatment 1), subjects

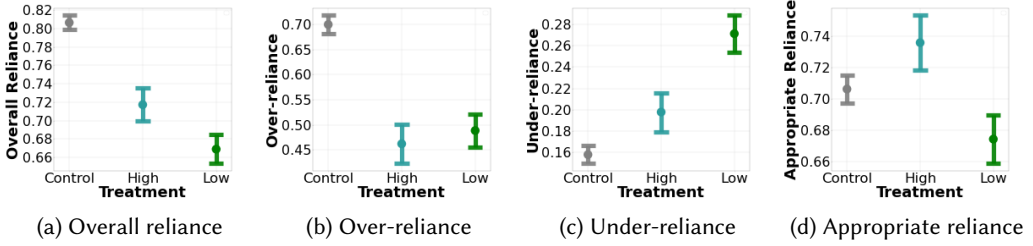


Fig. 5. The effects of active solicitations of second opinions on the subjects' overall reliance (5a), over-reliance (5b), under-reliance (5c), and appropriate reliance (5d) on the AI model. Data for the control treatment includes all subjects assigned to the control treatment without applying any matching method. Error bars represent the standard errors of the mean.


who had solicited second opinions from high agreement peers for at least once in Treatment 2, and subjects who had solicited second opinions from low agreement peers for at least once in Treatment 3. We can see from these figures that subjects who had actively solicited for second opinions had a lower level of overall reliance on the AI model than subjects in Treatment 1. A one-way ANOVA test confirms that the difference in subjects' overall reliance across treatments is significant ($F(2, 4057) = 39.42, p < 0.001$), and the post-hoc Tukey HSD tests suggest that subjects in both Treatments 2 and 3 who had solicited for second opinions for at least once decreased their overall reliance significantly compared to subjects in Treatment 1 (i.e., control vs. high: $p < 0.001$, Cohen's $d = 0.21$; control vs. low: $p < 0.001$, Cohen's $d = 0.32$). Moreover, we find a significant difference across the three groups of subjects in terms of their over-reliance on the AI model ($F(2, 1012) = 26.27, p < 0.001$), and the pair-wise comparisons indicate that subjects who solicited for second opinions in both Treatments 2 and 3 decreased their over-reliance on the AI model significantly (i.e., control vs. high: $p < 0.001$, Cohen's $d = 0.49$; control vs. low: $p < 0.001$, Cohen's $d = 0.44$).

In the meantime, a one-way ANOVA test on subjects' under-reliance on the AI model also suggests a significant difference across treatments ($F(2, 3042) = 21.04, p < 0.001$), but the pairwise comparisons indicate that the differences are mainly caused by the comparison between subjects who had solicited second opinions from the low agreement peers and the other two groups of subjects (control vs. low: $p < 0.001$, Cohen's $d = 0.28$; high vs. low: $p = 0.005$, Cohen's $d = 0.13$), but *not* between subjects who had solicited opinions from high agreement peers and subjects in the control treatment. Moreover, there is a significant difference in subjects' appropriate reliance across treatments ($F(2, 4057) = 3.49, p = 0.031$)—subjects who had solicited opinions from high agreement peers had the highest level of appropriate reliance, although it was only significantly higher than that for subjects who had solicited opinions from low agreement peers ($p = 0.025$, Cohen's $d = 0.17$) but not subjects in the control treatment.

7 INSTRUCTIONS PROVIDED IN EXPERIMENTS INTERFACES

The instructions that we provided to subjects in our experiments when introducing the AI model and the second opinions are included below.

First, for subjects in all treatments, we introduced the AI model that was used in their decision-making tasks for decision recommendations to them as follows:


- “Note that based on a large set of historical movie reviews, we have previously trained a machine learning model  to classify movie review's sentiment. In each task, we will

provide with you the classification made by this machine learning model to help you make the sentiment judgment.”

Next, for all treatments where subjects were provided with second opinions generated by peer crowd workers, we further provided the following instruction:

- “Moreover, we have previously asked a group of workers on Amazon Mechanical Turk to complete the same sentiment classification tasks **without** the help of our machine learning model. In each task, we will randomly select a worker from this group, and we will also show to you the sentiment judgement made on this task by the selected worker as a second opinion.”

On the other hand, for all treatments where subjects were provided with second opinions that were claimed to be produced from another AI model, we further provided the following instruction:

- “We have also trained [another machine learning model](#)  using a different algorithm. In each task, we will also provide with you the classification made by this machine learning model as a second opinion.”

8 LIST OF MOVIE REVIEWS USED IN OUR EXPERIMENT

Movie Review	Sentiment
<p>"Tourist Trap" is an odd thriller that came out in the 70's, it's about 5 friends Molly (Jocelyn Jones), Jerry (Jon Van Hess), Eileen (Robin Sherwood), Becky (Tanya Roberts) and Woody (Kevin McDermott), who stumble upon a closed down museum SLAUSEN'S LOST OASIS, a curious and eerie roadside museum. This goldmine of decaying, but strangely life-like mannequins is run by Slausen (Chuck Conners), an eccentric, but seemingly harmless has-been. Slausen has one warning for the youngsters: Stay away from Davey, Slausen's reclusive and disturbed brother. The youngsters' curiosity gets the best of them and they go exploring. The trap is sprung! Amidst flying objects, slamming doors, scarves that strangle on their own, empowered by some hidden force, the trap slowly closes in on the group. The "Creature" Davey and his army of murderous mannequins make quick and brutal work of the friends, until only one remains. Although not a Slasher movie "Tourist Trap" still contains elements of slasher movies such as the chase scenes and the stalking and the fact the killer wears a mask. The seemingly telekinetic abilities of the killer to lock bolts and animate the wax dummies, is used to great effect. Perhaps the scariest thing about this movie are the mannequins, which are admittedly scary enough to start off with, but are really spooky here. The film succeeds despite, or perhaps because of, an obviously meagre budget. These wax figures are blatantly plastic shop dummies- but this only goes to serve as even more eerie when their eyes move with an incredible human The acting is actually pretty good, Chuck Conners gives a well rounded and creepy performance as Mr Slausen, Jocelyn Jones is great as the female lead.</p>	<p>Positive</p>

<p>I watched this movie after seeing it on Broadway. I love the Broadway musical and I love the movie. I watched the movie like it was not related to the Broadway show. I am an avid reader and have seen what happens to most books when they are turned into movies, so I developed a philosophy really early. Assume that the movie is going to be based on the book (or musical in this case) but that while the story line may be similar it will not be the same, it will be different so watch it for what it is. I danced for 12 years before I had to make a choice. I was a good dancer(picking up chorus work in local productions as a child etc) but I wasn't super talented.I was however super talented as a show rider. I was told by my dance instructor and my trainer (who i spent several months a year at his farm out of state) that I had to make a choice when I turned 14. That I needed to move up from dancing two hours four-five days a week and riding 3 hours a day 7 days a week.. and dedicate to one or the other. So I dearly love dancing and I love this movie and a lot of the other ballet and dance movies. I just chose to watch this movie for what it is, it is a great movie about raw emotion and human interaction. It is about the power of anticipation and heartbreak when you work really hard to get something you want and you just do not get it. I love the movie. I love the Broadway musical.</p>	<p>Positive</p>
<p>On the day of the California Presidential Primary, between midnight and 1:00 AM, the spy Victor Rovner sends a message from Kuala Lumpur to USA. Meanwhile, in Los Angeles, the Federal Agent Jack Bauer has returned to his family and is having trouble at home with his teenage daughter Kimberly, who blames her mother Teri for putting Jack out of the house. Teri and Jack decide to have a serious conversation with Kim, and they discover that the girl has run away home. While trying to solve his domestic problem, Jack is called to his Counter Terrorist Unit by his colleague Nina Myers for a meeting with their chief Richard Walsh, who discloses a menace against the life of Senator David Palmer, who is running for president, and they need to find the shooter. Later, Walsh has a private conversation with Jack and tells that there is a conspiracy in the agency against David Palmer, and assigns Jack to find the conspirators. When an airplane explodes over the Mojave Desert, Jack has one additional issue to worry about. The first episode of "24" is a promising beginning of a successful series, introducing Jack Bauer. This is the first time that I have watched this show and I confess that I liked what I have seen: a complex and dramatic story, with multiple and realistic characters. Kiefer Sutherland is perfect in the role of a family man and a reliable agent in charge of three difficult missions at the same time: find a killer to protect an important politician; find a traitor in his agency; and find his teenage daughter, who is getting in trouble, while trying to save his marriage. My vote is eight. Title (Brazil): "12:00"</p>	<p>Positive</p>

<p>An occasionally surrealistic thriller that will push most people's buttons., the 4th Man is sure to offend anyone with a taste for the politically correct. The story's protagonist is a bisexual alcoholic Catholic writer, Gerard (Krabbe), with a seriously twisted sense of imagination. Verhoeven offers up Gerard has an example of everything wrong with the modern man. He's shiftless, delusional, unable to control his urges, afraid to commit to meaningful relationships, and utterly apathetic about life in general. As the character himself states at one point, he is a professional liar, unable to recall the truth. The movie opens with Gerard dreaming of spiders consuming Christ, and then waking to begin the long march to his own destruction. He chases off one man (a boyfriend presumably), then chases another at a train station. Later, at a lecture, he meets a woman who seems to want to help him, or perhaps she has more nefarious plans.. She quickly captures Gerard in her web, enticing him with sex and money, having plenty of both. She's also got secrets, like three dead husbands. Is she lonely, and genuinely looking for someone to nurture - or is she a deadly black widow, luring Gerard to his death? Will Garard be the 4th man she kills? The woman is Christine (Soutendijk), and Verhoeven does his best to keep you guessing what she's up to.This is an interesting movie, with a lot of sex and intrigue. It's similar to Verhoeven'sBasic instinct, but has a lot more depth, and is certainly more shocking. There's a lot of very strong gay content, which may make some viewers squirm. Highly recommended for fans of intelligent psychological thrillers, or anyone looking for something entirely new.</p>	Positive
<p>I must have seen this movie about four or five times already, and it gets better with each viewing. Suffice it to say: This is the best film I've ever seen. And I think I've seen a lot. But I've always wondered why this film got so shunned in some reviews or ratings. For example, take the IMDb Top 250. Why does it rank only at 216 (as of today)? Surely, the answer's not in the film itself (because that is nothing but flawless), but in its reception. The film caused controversy in its portrayal of compassion for a convicted murderer and its anti-death penalty attitude. And so, obviously, the more conservative-minded user probably didn't like the film (as you can see from some of the other comments). So DEAD MAN WALKING gets a ranking that's nothing but ridiculous in relation to its quality. Those people didn't understand what the film wanted to say, and maybe they didn't WANT to understand, being pro death penalty. So now I get it: It's all political. You're pro death penalty- you don't like (and therefore don't want to hear) what the film has to say. I'm truly sorry there are still so many people out there who simply tune out when a new perspective questions their beliefs. Mr. Robbins, your movie's issue split people's opinions. Some reconsidered their point-of-view, some simply didn't listen, but you made a very important point. Your movie will probably never show up on any "TOP 100 MOVIES OF ALL TIME"-list, but it'll be remembered, long after films like Braveheart or Babe or Apollo 13 (all of which were unjustly preferred over your film at the Oscars 1996) are forgotten. Congratulations, Mr. Robbins, and thank you for this important piece of filmmaking.</p>	Positive

<p>The most satisfying element about "Dan in Real Life" is that the relationship between Dan (Steve Carell) and Marie (Juliette Binoche) makes sense and is beautifully realistic. The casting of Oscar-winner Juliette Binoche as Dan's love interest was a superb decision; she is exceptionally talented, intelligent, naturally attractive and, thank goodness, appropriately aged for the part! Had this movie been made with Jessica Alba or Scarlett Johansson, it would have been a disaster. Another wonderful aspect about "Dan in Real Life" is that it is a perfect film for adults who are interested in a mature comedy that leaves out the three pillars of the "frat pack" formula: dumb chicks, chauvinistic guys, and sleazy jokes. "Dan in Real Life" is witty and has fun, intelligent laughs throughout. Whereas other comedies incorporate or are almost entirely based on jokes that shock the audience into laughing, the jokes from "Dan in Real Life" are more natural and clever, and involve some thinking on the part of the audience. My only problem with "Dan in Real Life" is that the rebellious, middle daughter is played too outrageously by actress Brittany Robertson. It's difficult to say if this was a personal choice on her part or a choice by the director. Either way, her character is unrealistic and annoying. But, this is only a minor flaw in the film, and does not take away from the story as a whole. All in all, "Dan in Real Life" is a great film, a fantastic escape from the redundancy of offensive and dumbed-down comedies. The quality of the writing, directing, acting, and (especially) cinematography is excellent. It is simply a beautiful, light-hearted comedy.</p>	Positive
<p>There's a "Third Man" look to the shadowy B&W photography of STOLEN IDENTITY, a thriller produced by Turhan Bey, ex-star of Universal pictures during the '40s. It's an expertly filmed tale of jealousy that leads to murder when a famous pianist (FRANCIS LEDERER) becomes overly possessive of his wife (JOAN CAMDEN) and is soon intent on carrying out a scheme to murder a man she's having an affair with. A taxi-driver (DONALD BUKA) happens to be giving the woman's lover a lift to the hotel when he steps outside a moment to chat with a worker digging up the street. Lederer uses the sound of the drill to muffle the sound of the bullet he puts in the head of the passenger from outside the back of the car. When Buka returns to his cab, he finds a dead man in the passenger seat. Enroute to report the murder to the police, he changes his mind and decides to switch identities with the dead man who has an American passport which means Buka could realize his ambition to return to the United States. The stolen identity plot becomes thicker when the man's girlfriend (Lederer's wife) shows up at the hotel to accuse Buka of impersonating the dead man. It's the sort of plot movie-goers have probably seen countless times, but it gets a nice workout here, with plenty of tense scenes as Buka and Lederer's wife plan how to run from the authorities until a final confrontation with the murderer and the police. It's extremely absorbing, well done and holds the interest throughout with some excellent atmospheric photography of Vienna that will remind most movie-goers of "The Third Man". Well worth viewing.</p>	Positive

<p>Contains Spoilers Luchino Visconti's film adaptation of Thomas Mann's novella is visually, if not philosophically, faithful to its source (Britten's opera offers a more faithful reading of the Apollonian/Dionysian struggles which consume the aging writer). It is certainly one of the most gorgeous films ever made. In the Visconti version, the emphasis is more on the physical aspects of the story. Never has Venice looked more beautiful and alluring, more decadent and effete. If you've read the novella, it's like having the descriptions on its pages come to life. Dirk Bogarde gives an outstanding performance as Gustav von Aschenbach. Although he has very little dialogue, he conveys the bitterness, aroused passion and finally, pitiful yearning of Aschenbach through facial expressions alone. Bjorn Andresen, the young actor who plays Tadzio, the beautiful object of Aschenbach's desire, was perfectly cast. He too plays the part with facial expressions and gestures. The Tadzio character is pivotal to the story, so any actor in this role must be worthy of inspiring passion and desire. Visconti, with his incredible eye for beauty, knew exactly what he was doing. And changing Ashenbach from a writer to a composer based on Gustav Mahler, and then using Mahler's music, especially the Adagietto from the 5th Symphony, was another brilliant stroke. Although I'd read the Mann story before the film, Mahler's music and Death in Venice will always be inextricably linked in my mind. As will the haunting images which appear throughout the film, especially that last one of Ashenbach dying on the beach as Tadzio walks slowly into the sea. One day this film will be released in DVD widescreen format and its visual splendors completely restored to us.</p>	Positive
<p>** Warning - this post may contain spoilers ** I only got a Gamecube in September 2005, and the first two games I bought were James Bond games, the decent Agent Under Fire and the dull Goldeneye Rogue Agent. The next game I planned to get was Everything or Nothing, because my friend told me that it was better than the two games I already had. I have to say, he was right. I bought this for a tenner in HMV, and when I got home, I slammed it in to my Cube and played it for hours on end. It was much better than my other two games, and there was a much better and more interesting storyline. Graphics were some of the best I have seen (but now that the XBOX 360 has come out, Farcry Instincts Predator has some of the best graphics known to man). The storyline was clever; mad man (Willem Dafoe, named as Nikolai Diavolo) and beautiful henchwoman (Heidi Klum, named as Katya Nadanova), try to destroy the world with tiny nanobots, which at the start of the game, you, James Bond, have to destroy on a train. The bad thing is that one of them is hidden in Katya's boobs. You then have to thwart their plans and save the world. The great thing about this game is that it actually has actors voicing the characters, such as Cleese voicing Q. There are 27 levels, some of them short and some of them pretty long and tricky. Gameplay - 10/10 Graphics - 9/10 Sound - 9/10 Replay value - 7/10 Multiplayer - 8/10 I give this game a grand total of 90%</p>	Positive

<p>I consider myself a casual fan of Dario Argento. For every really good flick by him (such as "Deep Red" and "Tenebre"), there seems to be one that's equally uninspired (his output since "Opera" has tended to disappoint). Still, there's no denying that when he's at his best, there are few horror directors who can top him. I consider "Opera" to be Argento's finest work. This is definitely the film where all of his trademarks are present. There's no well-developed characters and the plot makes very little sense once you begin to scrutinize it. Still, think of Argento as an European equivalent of Brian DePalma - the style is all that matters here, so much it becomes the substance. Typical to Argento, there's some beautifully filmed murder sequences. Those unfamiliar with the man's work may perceive that as a sadistic remark (and it may be, considering the often time misogyny of them), but its really true. Argento stages murder with an intricacy to eye-popping visual detail. He truly makes graphic violence an art form. Plus, his direction and the look of his films is impeccable. Fortunately, "Opera" is one of his most frightening products. Argento is the only director whom I feel booming rock music works well for horror sequences (when others attempt to pull it off, it comes across as cheesy). The acting varies, with Cristina Marsillach playing a beautiful and reasonably sympathetic but never particularly animate young opera performer. The rest of the actors are workmanlike and get the job done, but again, with Argento, the acting is never the point. Its the beautiful colors, the terrifying violence, and the overall fever dream / nightmare atmosphere. (9/10)</p>	Positive
<p>When me and my GF went to see this film, we didn't know what to expect, however she assured me that it had good reviews. So I went along with it. We got into the cinema and bought tickets and went into the screen. After a while of sitting there waiting for the film to start no one else walked through the door. I was very suspicious as you usually get at least a couple of more people in any film screening. The film began eventually and we sat there. After a while of very little dialogue and very "arty" type moody scenes I was starting to realise why we were the only people there. It was disjointed with random cuts from the main story to kids in a skate park, the story it's self made no sense. The kid was meant to have committed a crime when he didn't and If he did, writing a letter to no one is not an answer and you shouldn't feel not guilty just because you wrote that letter, he should have been punished. There was no point to this film at all. I have no idea why we didn't go and get our money back part of the way through the film. I tried to give it a chance I guess. There was little concept to this film, and the execution was disgraceful. The writer and director and just about everyone else who made this film should have realised what they were doing and stopped. It is an hour plus that I will never ever ever get back. I'm sorry to anyone who liked this film, but...it's just so so awful, i mean really really really bad. Oh well at least i never have to be subjected to it again.</p>	Negative

<p>just watched this "film" and it actually made me want to write my first comment on IMDb.com, even though i've been a user for more than 9 years. the reason that i watched this, is because i like splatter films and sometimes i like to test my limits and see what actually still shocks me. first of all, the gore in this film didn't shock me, not even the idea that someone came up with this and made it into a film - what really shocked me, is that there seems to be a market for this kind of crap. don't get me wrong - i'm all against censorship, but this film seems to me like it was made for some kind of fetish crowd that seems to get off on this type of sh*t.it didn't give you that same kind of disgust and guilt that one felt after watching films like "august underground". that film is terrible to watch, but at least you get the feeling that the filmmakers want to show you how disgusting violence is. in the case of "niku daruma", it seems like it was made strictly to arouse people. i prefer films that shock, because they are well done and thought through, like Gaspar Noe's films, or Takashi Miike's, or Funny Games or Man Bites Dog - those films will stick with you for a while. this film i will have forgotten by tomorrow, and the only thing that will stick with me, is the thought, that somewhere out there, there are people getting aroused by watching this sh*t. if you read this, please check yourself into the next hospital or shoot yourself - this of course does not apply to gore hounds, who just love splatter. you're cool! peace</p>	<p>Negative</p>
<p>Say what you will about cinema's "Wizard of Gore," Herschell Gordon Lewis, it must be conceded that from his first films (1963's trashy "Blood Feast" and 1964's crackerbarrel massacre "Two Thousand Maniacs") to his last (1972's "The Gore Gore Girls"), the man remained faithful to his muse, gleefully chopping up the bodies of young men and women for the delectation of the camera. In "Gore Gore," for example, someone has been mutilating the pasty-faced and pasty-clad strippers at the Tops & Bottoms Club, and obnoxious ex-detective Gentry is hired by a hotty cub reporter to assist on the case. The film features remarkably annoying and repetitive background music, terrible lighting, abysmal acting, repugnant characters, problematic sound AND, of course, some of Lewis' patented gross-out scenes. Thus, one of the strippers has her face shoved into boiling oil; one has her head ripped open; another has her face ironed and her nipples cut off; and still another has her bum paddled with a meat tenderizer until her entire backside is covered with what appears to be Buitoni tomato sauce. (I could be wrong here; it might have been Ragu.) The film also throws out some fairly lame humor, although some of the lines ARE pretty funny. For example, we learn that the real name of slain stripper Suzie Creampuff was...Ethel Creampuff! A bottle of acid says "Made In Poland" on it (don't know why, but I thought this was funny). And some of strip club owner Henny Youngman's lines are, of course, amusing. Still, this is NOT the movie to show to Aunt Ethel or Sister Agatha. It is one of the sickest you'll ever see, with only one surefire, crowd-pleasing moment—the title card at the film's conclusion that reads "We Announce With Pride: This Movie Is Over"!</p>	<p>Negative</p>

<p>Inappropriate. The PG rating that this movie gets is yet another huge misstep by the MPAA. Whale Rider gets a PG-13 but this movie gets a PG? Please. Parents don't be fooled, taking an elementary school child to this movie is a huge mistake. There were numerous times I found myself being uncomfortable not just because the humor was inappropriate for kids, but also because it was totally out of the blue and unnecessary. But all that aside, The Cat in the Hat is still a terrible movie. The casting and overall look of the movie are the only saving graces. The beautiful Kelly Preston and the always likeable (or hateable in this case) Alec Baldwin are both good in their roles even though Preston is almost too beautiful for a role like this. The kids are conditioned actors and it shows, especially with Dakota Fanning. Fanning is the only human aspect of the film that kept me watching and not throwing things at the screen. Did I mention there was an oversized talking cat in this movie? Mike Myers is absolutely deplorable. I didn't like him as the voice of Shrek, and I truly believe now that Myers should not be allowed near the realm of children's films ever again. His portrayal of The Cat is a slightly toned down version of Fat Bastard and Austin Powers. In the end, the cat should not have come, he should have stayed away, but he came, even if just for a day, he ruined 82 minutes of my life, 82 minutes of personal anger and strife. The Cat in the Hat may be the worst kids movie ever.</p>	Negative
<p>I can't believe that Steven Segal's career has hit so low that he has been reduced to making 4th rate films with 5th rate secondary actors. I watched this moving expecting to see him beet the crap out of some people the way he usually does. When he is reduced to using a single judo chop between the shoulder blades to take out an opponent and the guy falls like a ton of bricks something is wrong. The plot is unbelievable as a movie, and even if you excuse the visuals, and had read this story as a novel, you'd be left wondering why you had even picked up the book. Steven Segal goes through the motions and seems as if he is only doing this because he is under obligation. He shows no effort and no enthusiasm, and in some scenes he doesn't show up at all. I hate to repeat other peoples comments, but the use of stock footage for cut scenes and for visuals of the aircrafts in flight is pathetic. The condition of those scenes chopped in, is shaky and scenes themselves seemed to have deteriorated over time. The zappruder film showing President John F Kennedy being assassinated is steadier and cleaner. My honest opinion is to tell you not to waste your time seeing this movie, it is not up to the standards of his work in the glimmer man or exit wounds. I read one review that said the movie had a 12 million dollar budget (Segal being paid 5 of that) and that the movie still came in under budget. I must concur. It is no wonder that this is a direct to DVD movie, as no conscientious theatre owner would play this movie .</p>	Negative

<p>Most people get the luxury of typing in the title of a film, and finding out about the film before watching it but unfortunately I've just never been one of those kind of people. I wouldn't even read the synopsis for fear of spoilers but there are two sides to that because if you ignore such warnings and even give a film a chance after it has flopped in theatres, you're entering at your own risk and might just end up with a bad taste in your mouth which is exactly how I feel about this stupid movie. Honestly, the only thing good about Shakalaka-Crap-Crap are some of its songs (and seriously excluding the title track). Even the ever promising Kangana Renaut's talent (Metro, Gangster, Woh Lamhe) is seriously wasted here as she plays Ruhi, the woman who has captured the attention of both the leading male characters played by Bobby Deol (who plays A.J. a rootless music producer) and Upen Patel (who plays Reggi, an upcoming artist who crosses A.J.'s path). Celina Jaitley provides the right amount of OOMPH required of a socialite who gets jilted by Reggi (whom she helped get his foot in the record industry's door). This doesn't sound like a mix or movie that should include Anupam Kher right? Well, you're wrong because he's in it as Reggi's father (another wasted talent). The film might not have been so bad had they not over-killed the writing behind Deol's character. The moral message was too preachy (revenge had a deadly dark side) and the ending was way too overblown that it will make you wonder why you sat down to such a foolish movie in the first place. Truly, this is the epitome of crap.</p>	Negative
<p>When it comes to horror movies, I am more than willing to suspend disbelief, ignore sub-par production values, and overlook plot holes in the interest of a good scare. This movie simply has no good scares to offer. It can't even be enjoyed as camp. Bad dialogue, bad acting, bad direction, the kills were predictable and poorly staged, the music was annoying, the camera work was wretched, even the costumes were bad. I felt really bad for the actors, who were obviously trying, but who had to deal with terrible, contrived dialogue and an obvious lack of direction. I doubt they got any rehearsal, either. It's embarrassing to watch, and so boring than making it through to the contrived "surprise" ending requires tremendous endurance. It's quite easily one of the worst movies I've ever seen. I don't normally write reviews, but this one was so bad that I felt compelled to warn others. This movie is a complete waste of time. If you must watch this movie, don't miss the "Making of"-featurette. The writer/director seems to be under the impression that making the killer a woman was kind of bold, daring move. (Seen it.) He and the cast spend half an hour deconstructing this film as if it's a new-age "Citizen Kane." It's like listening to a group of third-graders take you behind the scenes of their Christmas pageant. They truly think they've created something of substance. It's sad, really. The only reason I gave this movie a "2" is because I think "1" should be reserved for true atrocities, like "Manos: Hands of Fate" and "Space Mutiny." So "American Nightmare" isn't the WORST movie I've ever seen, but I'd have to say that it's somewhere in the bottom fifty.</p>	Negative

<p>In 1993, "the visitors" was an enormous hit in France. So, the sequence was inevitable and unfortunately, this sequence ranks among the worst ones ever made. This is a movie that doesn't keep its promises. Indeed, it's supposed to tell a sole story. Jean Reno must go in the twentieth century and take Christian Clavier back in the Middle Ages so that time can normally follow its course. The problem is that Clavier feels completely at ease in the world of the twentieth century, and so make him get back in the Middles Ages is rather hard... Instead of this, the movie goes on several other stories without succeeding in following the main plot. As a consequence, the movie becomes sometimes muddle-headed, sometimes a bit of a mess. But the movie also suffers from the performance of nearly all the actors. Reno and Clavier fall into the trap that however they could avoid in the first movie: they're going over the top and become annoying. Then, why did Jean-Marie Poiré the film-maker engage Muriel Robin in the female main role? He made a mistake because she seems ill-at-ease and is absolutely pitiful. The other actors aren't better: Marie-Anne Chazel is nonexistent and Christian Bujreau, unbearable. Of course, the movie contains a few good moments with efficient gags but it often falls into vulgarity and easiness. Certain sequences and dialogs are affected. It also appears hollow because Poiré takes back elements that secured the success of the first movie. Thus, a young girl takes Reno for a close relative of her family and asks him to take part in her wedding. A labored and disappointing follow-up. Anyway, what's the interest of this movie otherwise commercial?</p>	<p>Negative</p>
<p>"Tragic Hero" is a film that is most definitely trying to emulate the classic Godfather films, focusing on family, crime, loyalty, and revenge. Also, this is part of a two part series as The Godfather also was (at the time). However, this film comes nowhere near the level of those classic films and actually fairs worse than other Triad thrillers being released in Hong Kong at the time. One reason is the acting. With the exception of Chow Yun Fat, the acting is generally over the top and unbelievable. The audience tends to find the proceedings humorous simply because the actors' inability to maintain any degree of seriousness. As a result, we find the film not truly emotionally involving or intense since we don't particularly care what occurs with these characters. Another reason is its lack of focus. The narrative tries to incorporate many different story elements into the film, but this results in portions of the movie becoming underdeveloped as well as lacking any real sense of coherency. The audience sometimes becomes lost at the proceedings we are viewing, not knowing what the character's motivations are. The film's climax does contain a decent gun fight, but again since we don't care about the characters, we don't care who lives or who dies; The scene loses it's intensity and suspense because of this. The other action set pieces are rather mundane in nature, with a feeling of it being too controlled rather than free flowing. In general, this is a strictly average film and isn't recommended to the general film viewer... Only hard core genre enthusiasts and fans of Chow Yun Fat should consider this film for viewing.</p>	<p>Negative</p>

<p>This film reminded me so much of "A History of Violence" which pretended to be a close study of violence and violent behavior but ended up just being nothing short of a cheap action movie masquerading as some thinking film on violence. Dustin Hoffman and his new British bride move to a small English town and encounter endless harassment from the local drunks who do nothing but hang at the pub all day and make trouble. Don't these men have a job? Anyway, Dustin takes all he can take and by the end of the film he holds up in his house and fights off each one of the drunk attackers by such gruesome means as boiling whiskey poured over someone, feet being blown off by a shotgun and someones head getting caught in a bear trap. Funny that someone would have a need for such a large bear trap in a small British town except maybe put a mans head in it. Sam Peckinpah who made the "Wild Bunch" which also covered the topic of blood letting violence in which no one was spared. But it was done with style, and you believed it. Straw Dogs is not believable. First of all the location is wrong and does not work. Why place it in England? I would think maybe in some inner city location or a small town in the American South in the 1930's or something. Second it is not in my view ever really explained clearly why these men are so quick to violence except maybe they got drunk and felt a need to kill Hoffman and rape his wife. Sam Peckinpah missed the mark on this one.</p>	<p>Negative</p>
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Table 1. The movie reviews used in both our experiments.

REFERENCES

[1] Elizabeth A Stuart, Gary King, Kosuke Imai, and Daniel Ho. 2011. MatchIt: nonparametric preprocessing for parametric causal inference. *Journal of statistical software* (2011).