

Effects of Symptom versus Recovery Video, Similarity, and Uncertainty  
Orientation on the Stigmatization of Schizophrenia

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Abstract

191 participants either watched a video of a person with schizophrenia who discussed his recovery or the symptoms he experienced when acutely ill. Participants were asked to focus

either on similarities or differences between themselves and the person depicted. Uncertainty orientation, the extent to which people prefer to resolve uncertainty (uncertainty-orientated) or avoid it in order to maintain certainty (certainty-orientated) was assessed for each participant. Results showed that for explicit attitudes, the recovery video and uncertainty orientation were significantly associated with more positive responses. The similarity manipulation interacted with video content and uncertainty orientation in influencing implicit attitudes. As expected, compared to those who are uncertainty-oriented, participants who are certainty-oriented were more likely to hold positive implicit attitudes after watching the recovery than symptoms video, particularly when attending to similarities.

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## **1. Introduction**

Stigma of mental illness refers to the process by which people with mental illness are ascribed negative stereotypes such as being dangerous and unpredictable, faced with negative evaluations and attitudes, and subjected to society-wide discrimination such as social rejection and exclusion (Link & Phelan, 2001). Such stigma has been found to interfere with seeking treatment and can interfere with recovery and compromise quality of life for those with mental illness (Corrigan, 2005; Corrigan & Watson, 2002). Many different strategies have been used in an attempt to reduce stigma (Corrigan, 2005; Corrigan et al, 2012; Dalky, 2012). Among them, contact, including video-based contact, has been identified as more effective than other approaches in lowering stigma (Corrigan et al., 2012; Couture & Penn, 2003). Video-based contact often entails having viewers watch videotapes of people diagnosed with mental illness talking about their experiences with the illness (Clement et al., 2012; Matteo, 2013).

Although video contact has been shown as an effective and cost-efficient strategy of reducing stigma and is frequently utilized by government or non-profit organizations in stigma reduction campaigns or interventions (e.g. Grzanka & Mann, 2014; Livingston et al., 2013), little is known about the factors that contribute to effective videos and influence the impact of these videos. The present research sought to close this gap of understanding by examining potential moderating effects of three factors: (1) content of the video, (2) mindset of the audience, and (3) individual differences of the audience on the impact of video contact on stigma reduction.

### **1.1 Symptoms-focused versus Recovery-focused videos.**

There is some initial evidence that people react differently to the provision of different types of information about mental illness (Corrigan, Powell, & Michaels, 2013; Reinke et al 2004). Of particular relevance is the work of Reinke et al (2004) who found that a video presentation by an individual with a psychotic disorder which emphasized acute symptoms did not improve reaction to those with severe mental illness, but a presentation by the same person which placed more emphasis on recovery did. It has also been found that viewing a video of a positive interaction between a person and someone with schizophrenia can lead to more positive attitudes towards people with schizophrenia (West & Turner, 2014).

The existing evidence, then, seems to suggest that for the purpose of reducing stigmatization, videos about recovery may be more effective than videos about symptoms. Such expectation is further supported theoretically by considering the mediators of the relationship between personal contact and prejudice. It has been found that increased knowledge can reduce prejudice, whereas increased contact anxiety can elevate prejudice (Pettigrew & Tropp, 2008). Both symptoms-focused and recovery-focused videos could increase people's knowledge of mental illnesses, but a symptoms-focus could also heighten contact anxiety by drawing attention to symptoms such as hallucinations and emotional instability, that make the target person appear challenging to interact with or even dangerous. There has been little research other than Reinke et al (2004) that directly assesses the effect of different video material on the stigma of serious mental illness. The current study provided further investigation of this issue.

## **1.2 Perceived Similarity**

Other than the content of video-based contact, perceived similarity is also likely to influence stigmatization towards those with mental illness. Perceived similarity has been found to lead to self-outgroup projection, which leads to decreased stereotypes (Ames, Weber, & Zou, 2012), and serves as a mediator between positive inter-group contact and positive evaluations of the out-group (Stathi & Crisp, 2010, Study 3). Asking participants to focus on similarities between themselves and a target person or group has been found effective in facilitating perceived similarity (Corcoran & Mussweiler, 2009; Hewstone, Hassebrauck, Wirth, & Waenke, 2000). We therefore anticipated that, when instructed to focus on similarity between themselves and the person in video, participants would have more positive responses than when instructed to focus on dissimilarity. Moreover, such difference would be more apparent when the recovery, rather than the symptoms, video was watched, because similarities would be more easily perceived in the former than latter video.

### **1.3 Uncertainty Orientation**

In the extant literature on the effect of video-based contact in reducing stigmatizing attitudes towards mental illnesses, little has been done to examine potential individual differences that could lead to different responses to the same videos. Uncertainty orientation reflects differences in motivation to seek new information and in dealing with uncertainty brought about by novel situations (Sorrentino & Short, 1986). When facing uncertainty about themselves and/or their environment, uncertainty-oriented people (UOs) are more likely to seek out new information in order to resolve uncertainty, whereas certainty-oriented people (COs) are more likely to resort to their existing beliefs and knowledge and strive to maintain clarity

even at the cost of not knowing the “true answer” (Sorrentino, 2013; Sorrentino, Bobocel, Gitta, Olson, & Hewitt, 1988).

Past research on uncertainty orientation and perceived similarity (e.g., Hodson & Sorrentino, 2001, 2003; Roney & Sorrentino, 1987) has found that UOs perceive greater similarity than COs across different groups of people, but are motivated to process information when they expect others to be different from themselves. In contrast, COs tend to see a greater amount of dissimilarity across different groups of people, but are motivated to process information when people are expected to be similar to themselves. These findings led to the prediction of an interaction between uncertainty orientation, video content, and the similarity manipulation in the current study. COs were expected to show greater motivation to process information in the video when asked to focus on potential similarities, rather than dissimilarities, leading to greater difference between their responses to the recovery and symptoms videos. In comparison, looking for differences should activate information processing for UOs, leading to greater difference between their responses to the recovery and the symptoms video. Thus, to the extent that the recovery video leads to more positive attitudes toward schizophrenia than the symptoms video, this difference should be greater for COs when asked to attend to similarities but for UOs when asked to attend to differences.

#### **1.4 Current Study**

One important extension present in the current study to the existing literature on stigmatization against those with mental illness is the inclusion of both explicit and implicit response measures. In recent years there has been increased interest in using procedures which

assess the effect of associational processes on performance based measures to assess attitudes and stereotypes (Payne & Gawronski 2010), and there has been advocacy for the greater use of such "implicit" methods to assess responses to those with mental illness (Lincoln et al 2008; Stier & Hinshaw, 2007). There is evidence that both explicit and implicit have validity, but reflect different processes, and differentially predict deliberative or automatic behaviors (Asendorpf, Banse, & Mücke, 2002; Gawronski & Bodenhausen, 2006; Perugini, Richeton, & Zogmaister 2010). It is thus interesting to examine how the stigmatization process manifests itself at both the implicit and the explicit levels, and whether the type of video, perceived similarity, and uncertainty orientation influence responses at these two levels differently.

## **1.5 Hypotheses**

We hypothesized that while the recovery video (vs. symptoms video), and a focus on similarity (vs. dissimilarity), would lead to more positive responses to people with schizophrenia; these differences will be subsumed by a higher order with uncertainty orientation. That is, COs will have more positive responses elicited by the recovery video than the symptoms video when focusing on similarity than dissimilarity between the person in the video and themselves. UOs, in comparison, will have more positive responses elicited by the recovery video than the symptoms video when focusing on dissimilarity than similarities.

## **2. Method**

### **2.1 Participants**

191 (142 women and 49 men) participants were recruited through advertisement for a “study of impression formation” on the campus of a North American university. Each

participant was paid \$15 for participation. The age of the participants ranged from 17 to 62, with a mean age of 21.

## **2.2 Procedure**

All participants completed the study protocol on computers in the social psychology laboratory at the university. Participants first completed the resultant measure of uncertainty orientation (RUM; see Sorrentino, Roney, & Hanna, 1992). After completing the RUM measure, participants were randomly assigned to one of four conditions. Participants watched either a symptoms or a recovery video of "Andrew", who was diagnosed with schizophrenia and is in recovery.<sup>1</sup> Both videos were about 10 minutes in length. After watching the videos, all participants were asked to complete both explicit and implicit measures in counterbalanced order.

## **2.3 Materials and Measures**

### **2.3.1 Uncertainty Orientation Measure**

The measure of uncertainty orientation, RUM, consists of two components, the need to resolve uncertainty, and the desire to maintain certainty. The first component was assessed using a modified Thematic Apperception Test (TAT; Murray, 1937; Sorrentino et al., 1992), in which participants composed four stories in response to four sentence leads (e.g. "Two people are working on a piece of equipment in the laboratory"). Participants' stories were scored by a trained scorer whose inter-rater reliability was above .90 with the scoring manual (Sorrentino et al., 1992), and another expert scorer. A story received a +1 if imagery for uncertainty was present and then scored +1 for up to 10 content subcategories (e.g., need, positive affect, etc.),



leading to a maximum score of +11 for each story. When the story did not contain any uncertainty related imagery, or when uncertainty was present but the characters did not actively seek out resolution of the uncertainty, it received a score of -1 or 0, respectively. The final TAT score for each participant was their total score over the four stories.

The second component, need to maintain certainty, was inferred from an acquiescence-free measure of authoritarianism (Cherry & Byrne, 1977). People who score high on this measure tend to prefer familiarity and predictability over new and novel environments (Kelman & Barclay, 1963). The Cronbach's alpha for this scale was .77 in this study. Participants' RUM scores were calculated by subtracting standardized authoritarianism scores from standardized TAT scores (Sorrentino et al, 1992), and were then centered around the mean for further analyses. Participants with positive RUM scores are more uncertainty oriented and those with negative RUM scores are more certainty oriented.

### **2.3.2 Symptoms versus Recovery Video**

In the symptoms video, Andrew primarily talked about his acute symptoms, such as hallucinations and delusions, and hospitalizations during his psychotic episodes. At the end of the video, he indicated that he had now recovered and was back to work. In the recovery video, Andrew briefly mentioned his diagnosis, and then primarily focused on his recovery process such as taking medications and going back to school and work.

### **2.3.3 Similarity/Dissimilarity Manipulation**

The video conditions were crossed with the similarity/dissimilarity manipulation, which involved asking participants prior to the video to either "keep thinking of what you have in

common with this person and try to find as many similarities as possible” or to “keep thinking of ways you are different from this person and try to find as many dissimilarities as possible”.

#### **2.3.4 Explicit measures**

In order to assess the extent to which any effect of the video on perceptions of Andrew generalizes to others with schizophrenia, all ratings were completed separately with respect to Andrew and with respect to people with schizophrenia in general. The first measure consisted of 7-point rating scales with reference to 5 impressions (being dangerous, difficult to interact with, psychologically weak, incompetent, and having a poor prognosis) that have been frequently implicated as stereotypes of people with schizophrenia (Angermeyer & Matschinger, 2004; Hayward & Bright, 1997). Ratings on the five impressions were aggregated into impression towards Andrew and towards people with schizophrenia in general, respectively. Higher scores indicate more positive impression.

The second explicit measure was the Inclusion of Others in Self Scale (IOS) (Aron, Aron, & Smollan, 1992). The IOS scores range from 1 to 7, where 1 stands for no perceived overlap at all in characteristics between oneself and Andrew or people with schizophrenia in general, and 7 stands for a great deal of perceived overlap.

Finally, participants’ behavioral intentions were measured by an adaptation of items from the Bogardus social distance scale, which is frequently used in research on the stigma of mental illness (Link, Yang, Phelan, & Collins, 2004). Participants were asked to indicate, on a 5-point scale, the likelihood that they would engage in each of 11 different social interactions with the target (e.g., going to a party at his house; trusting him to take care of one’s child). Ratings over

the 11 interactions were averaged to generate an aggregated index of behavioral intention towards Andrew and towards people with schizophrenia in general. Higher scores reflect less preferred social distance and more positive behavioral intentions.

### **2.3.5 Implicit measure**

To measure participants' implicit attitudes towards Andrew, we employed the Affect Misattribution Procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005). This procedure assesses the effect of being primed with a picture of Andrew on evaluation of subsequent stimuli. The final AMP scores were calculated in a way that higher scores indicating more positive implicit evaluation of Andrew<sup>2</sup>, when controlling for participants' implicit evaluation of the neutral prime (i.e., a grey square).

### **2.3.6 Thought Listing**

Finally, participants were asked to list their thoughts pertaining to similarities and dissimilarities between Andrew and themselves. The number of reported similarities and dissimilarities were counted and recorded.

## **3. Results**

### **3.1 Effects on Explicit Measures**

Multiple regression analyses were used to examine the effects of video contents, similarity/dissimilarity manipulation, and uncertainty orientation on each of the six explicit measures. The three predictors, video (symptoms-0; recovery-1), similarity/dissimilarity focus (similarity-1; dissimilarity-0), and RUM scores (again, grand-mean centered), and all their two-way and three-way interactions were entered into the regression models in three steps, as

suggested by Aiken and West (1991).

In the first step, only video, similarity/dissimilarity manipulation, and RUM were entered into the prediction equations. Video was found to have a significant effect on all measures except impression towards people with schizophrenia in general,  $B=.20$ ,  $SE=.10$ ,  $p=.052$ . The recovery video led to more positive responses on participants' impression towards Andrew ( $B=.85$ ,  $SE=.11$ ,  $p<.001$ ), IOS rating with respect to both Andrew ( $B=.75$ ,  $SE=.15$ ,  $p<.001$ ) and people with schizophrenia in general ( $B=.37$ ,  $SE=.15$ ,  $p=.016$ ), and behavioral intentions towards both Andrew ( $B=.52$ ,  $SE=.12$ ,  $p<.001$ ) and people with schizophrenia in general ( $B=.34$ ,  $SE=.12$ ,  $p=.005$ ).

RUM had a significant effect on all six dependent variables. Greater uncertainty orientation was associated with more positive impressions of both Andrew ( $B=.19$ ,  $SE=.04$ ,  $p<.001$ ) and those with schizophrenia in general ( $B=.14$ ,  $SE=.04$ ,  $p<.001$ ), IOS rating towards both Andrew ( $B=.20$ ,  $SE=.06$ ,  $p<.001$ ) and people with schizophrenia in general ( $B=.14$ ,  $SE=.06$ ,  $p=.010$ ), and behavioral intentions towards both Andrew ( $B=.19$ ,  $SE=.04$ ,  $p<.001$ ) and people with schizophrenia in general ( $B=.19$ ,  $SE=.04$ ,  $p<.001$ ).

Similarity/dissimilarity manipulation did not have a significant effect on any of the explicit measures. There were no two- or three-way interactions between video, similarity/dissimilarity manipulation, and RUM in predicting scores on the explicit measures.

Overall, the regression models predicted 33% of the variances for impression towards Andrew, 11% for impression towards people with schizophrenia in general; 14% of variances for IOS towards Andrew, and 9% for IOS towards people with schizophrenia in general; and

17% of variances for behavioral intentions towards Andrew, and 12% for behavioral intentions towards people with schizophrenia in general.

### 3.2 Effects on Implicit Measure

The same multiple regression as previously described was conducted on AMP scores. No significant effects were found other than a three-way interaction among video, similarity/dissimilarity manipulation, and RUM,  $B=-.11$ ,  $SE=.05$ ,  $p=.021$ .

To interpret the three-way interaction, AMP scores of people with +1 and -1 Standard Deviation on RUM were plotted in the four experimental condition: 2 Video (Symptoms vs. Recovery) X 2 Similarity/Dissimilarity Focus (Similarity vs. Dissimilarity). See Figure 1 for the interaction. People with -1 Standard Deviation about the mean RUM were classified as COs, whereas people with +1 Standard Deviation about the mean RUM considered UOs.

As can be seen in Figure 1, results were consistent with predictions. When asked to focus on similarities, COs showed more positive responses after watching the recovery than the symptoms video, whereas UOs showed no such pattern. Such differences between UOs and COs in the responses to different video contents was not found when the focus was on the dissimilarities. Comparisons between single slopes showed that, when participants focused on similarities, the relationship between RUM and AMP scores varied significantly as a function of video content,  $B=-.08$ ,  $SE=.03$ ,  $t(92)=-2.73$ ,  $p=.008$ : when watching the recovery video, COs showed higher AMP than UOs,  $B=-.04$ ,  $SE=.02$ ; when watching the symptoms video, COs showed lower AMP than UOs,  $B=.03$ ,  $SE=.02$ . The interaction was not significant when participants focused on dissimilarities,  $B=.026$ ,  $SE=.02$ ,  $t(92)=.77$ ,  $p=.44$ .

### 3.3 Exploratory Analyses on Similarity/Dissimilarity Thoughts

Video, similarity/dissimilarity manipulation, and uncertainty orientation, coded as above, were entered into a multiple regression in predicting the number of similarity and dissimilarity thoughts, respectively. The recovery video was found to be associated with significantly more similarity thoughts than the symptoms video ( $B=.74$ ,  $SE=.27$ ,  $p=.007$ ). Positive RUM scores, which reflect an uncertainty orientation, were associated with significantly more similarity thoughts,  $B=.26$ ,  $SE=.10$ ,  $p=.009$ . The similarity/dissimilarity manipulation did not significantly predict the number of similarity thoughts independently of video condition and RUM scores,  $B=.19$ ,  $SE=.27$ ,  $p=.49$ . However, the dissimilarity manipulation was associated with significantly more dissimilarity thoughts than a focus on similarity,  $B=-.93$ ,  $SE=.37$ ,  $p=.012$ .

We further explored the possibility of similarity thoughts mediating the positive effects of recovery video and uncertainty orientation on explicit measures by conducting mediational analyses, using the PROCESS plugin in SPSS, developed by Andrew Hayes (2013). Results revealed that the number of similarity thoughts reported by participants did not mediate the positive effects of recovery video on any of the explicit measures, with the exception of IOS scores towards Andrew,  $B=.13$ ,  $SE=.06$ ,  $Z=2.24$ ,  $p=.025$ ; nor did it mediate the positive effects of uncertainty orientation on any of the explicit measures, with the exception of IOS scores towards Andrew,  $B=.05$ ,  $SE=.02$ ,  $Z=2.24$ ,  $p=.025$ .

## 4. Discussion

Results for the present study were mixed: at the explicit level, video content and

uncertainty orientation significantly influenced people's reactions; the predicted three-way interaction between video, similarity/dissimilarity focus, and uncertainty orientation was found only at the implicit level. As we predicted, watching a person with schizophrenia describe his recovery led to less attribution of negative characteristics, greater perceptions of shared personal characteristics, and more positive behavioral intentions towards him than when the video focused on symptoms. These benefits generalized to responses toward others with schizophrenia. Individual differences in uncertainty orientation were shown to have a significant effect on all explicit measures: Having an uncertainty orientation was related to more positive explicit responses to Andrew and those with schizophrenia in general.

Exploratory analyses on the number of similarity thoughts reported by the participants suggested that the recovery video (vs. symptoms video) and an uncertainty orientation (vs. certainty orientation) were associated with a greater number of similarity. However, our expectation that perceived similarity would mediate the positive effects of the recovery video and an uncertainty orientation on explicit attitudes was not supported by the mediational analyses with the number of similarity thoughts. The non-significant results for the mediational analyses could indicate that our measure of perceived similarity was not optimal. For example, some perceived similarities might be seen as more important than others to the participants, but such a difference was not accounted for by merely counting the number of thoughts. The results may also indicate that factors other than perceived similarity mediated the positive effects of the recovery video and uncertainty orientation on the explicit attitudes towards those with mental illnesses.

For the implicit measure, we found the hypothesized three-way interaction of video, similarity/dissimilarity manipulation, and uncertainty orientation in predicting scores on the AMP. COs, but not UOs, had more positive responses to the recovery video than the symptoms video when instructed to attend to similarities than differences. These findings are consistent with our rationale that COs would process the information contained in the videos to a greater extent when they focused on similarities between them and Andrew, which, in turn, would lead to more positive responses to the recovery video than the symptoms video. The fact that such a three-way interaction was not found on explicit measures might suggest that the similarity manipulation was more effective in influencing people's automatic evaluations of others. When given the opportunity to engage in more deliberate evaluation processes, COs might not perceive someone with mental illness as an in-group member and as sharing much similarity with them, despite the similarity manipulation, leading to an absence of such a three-way interaction on explicit attitudes. This, of course, is only conjecture at this point, but is an intriguing avenue for future research.

One limitation of the current study is the use of university student sample. The study was advertised on a North American university campus. It was reasonable to assume that most of participants were university students, given the relative young mean age of the sample. This sample might limit the generalizability of the findings. Another limitation of the study is the lack of a baseline measure of participants' attitudes towards someone who is not with mental illness. Comparing a baseline attitude with participants' attitudes towards someone with mental illness would allow us to measure the magnitude of the effect of the manipulations on reducing



mental illness stigma.

## **5. Conclusion**

In this current study, we found that a video on recovery experiences would elicit more positive responses towards people with schizophrenia than a video on symptoms. Moreover, we found that individual differences in uncertainty orientation would influence both explicit responses on its own, and implicit attitudes by interacting with video contents and a focus on similarity versus dissimilarity between the viewers and the person in video. By showing that individual differences interacted with different interventions in influencing peoples' implicit attitudes, this study is an initial step in determining what type of communication, and for whom, may be helpful in reducing stigma toward people with schizophrenia. More research is required to answer this crucial question.

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## Footnotes

<sup>1</sup>Andrew was diagnosed with schizophrenia in real life, and all the material in the videos reflected Andrew's actual personal experiences.

<sup>2</sup>A modified version of the implicit association test (IAT) (Greenwald & Banaji, 1995) was also included, Results, however, were inconclusive, possibly because IAT is not as an appropriate measure of evaluation towards a specific individual than towards a group. Discussion of this measure has been eliminated for brevity's sake, but is available from the first author.



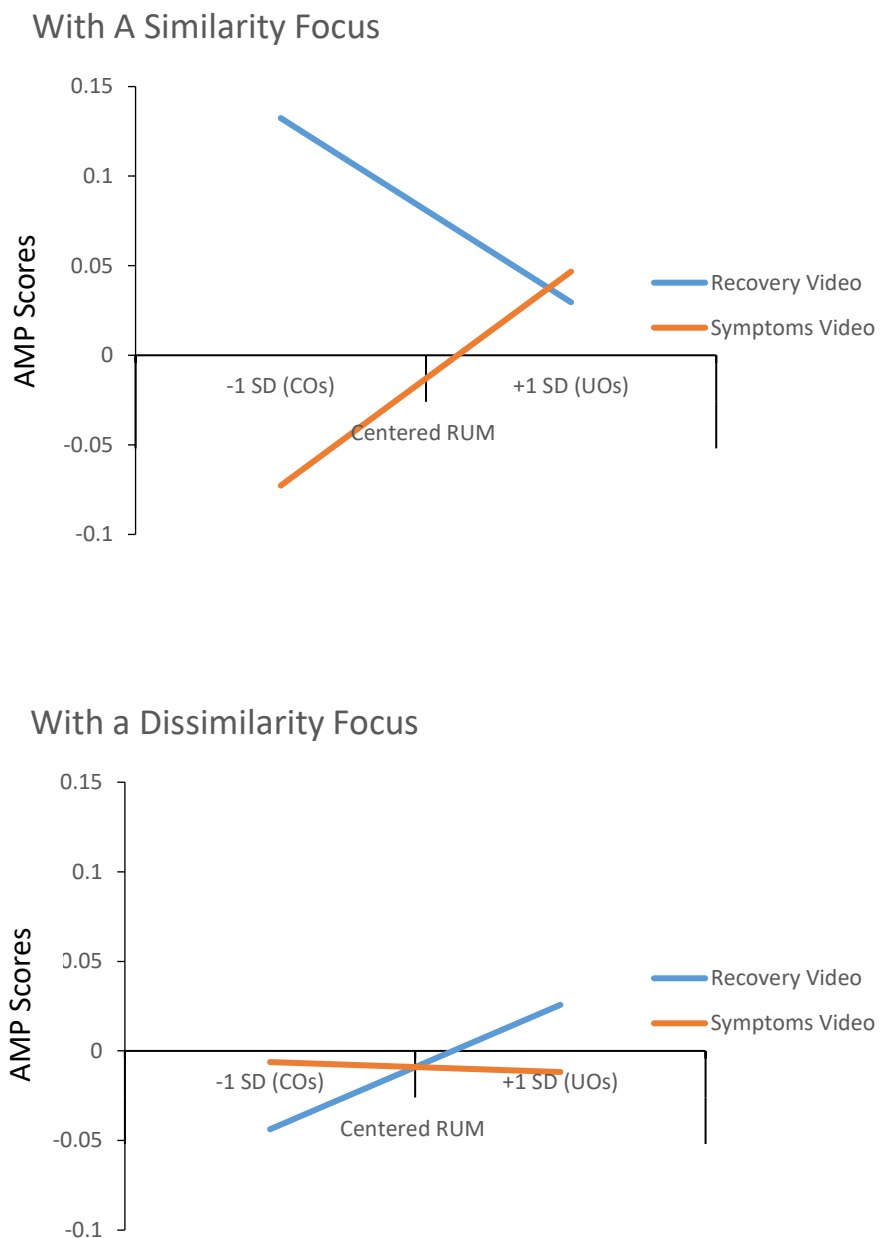


Figure 1. The regression slopes of AMP on RUM varied as a function of the interaction between video and similarity instruction.