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Self- versus other-directed outcomes, Machiavellianism, and hypothetical distance in COVID-19 antipandemic messages

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Public health information with a fear appeal is often used to promote people's positive health intentions. Anchored by the extended parallel process model and trait activation theory, in this study we examined the effects of self- versus other-directed outcomes, Machiavellianism, and hypothetical distance on the effectiveness of fear-appeal information in the context of COVID-19. In an online survey of 303 people in Wuhan, China, we found that respondents high in Machiavellianism reported stronger antipandemic intentions in response to a self-directed compared to an other-directed outcome message. This effect was actualized through the trait of Machiavellianism, moderated by hypothetical distance, and mediated by perceived severity. Our findings have implications for the effective development and delivery of public health information for specific groups, and for encouraging more detailed exploration of personality in relation to epidemiology.

Keywords
Machiavellianism; self-directed outcome; other-directed outcome; fear appeal; public health information; hypothetical distance; perceived security; pandemic; COVID-19; coronavirus

On March 11, 2020, the World Health Organization announced a pandemic of severe acute respiratory syndrome coronavirus disease, named *COVID-19*. At relevant public organizations around the world officials distributed epidemic prevention information through various channels to raise people's awareness. Antiepidemic messages with fear appeals were widely used. For example, as a reminder of the need for people to change their lifestyle in the context of COVID-19, the French Ministry of Health released a scenario showing how a daily kiss could send a family member to the intensive care unit (Ministère des Solidarités et de la Santé, 2020).

Fear appeals are a persuasive communication technique aimed at arousing respondents' fear emotions to promote their defense motivation or self-protection behavior (Rogers, 1975). The effectiveness of these appeals is affected by the method of information presentation (Burgers & Veldhuis, 2013; Smith & Stutts, 2003) and by individual differences (Bartikowski et al., 2019). The focus in research on fear-appeal communication has largely been on single-dimensional changes (i.e., information presentation or individual differences). Although it is common to see fear-appeal advertisements with different directional outcomes, such as a statement that smoking will harm oneself (self-directed) or that it will harm the health of one's family (other-directed), in the context of epidemiology there have been few academic studies conducted with a simultaneous focus on changes in information presentation and individual differences (Zajenkowski et al., 2020). Therefore, we examined differences in the efficacy of a public health message with self-directed versus other-directed outcomes in terms of arousing intention to prevent disease, according to the personality type of the recipients of the message.

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Furthermore, there has been little research on personality and responses to public health messages in a pandemic. As part of the dark triad of personality traits (comprising narcissism, Machiavellianism, and psychopathy), *Machiavellianism* is a personality profile characterized by pragmatism and a result orientation, and is defined by four enduring attributes: amoral manipulation, distrust of others, desire for control, and desire for status (Dahling et al., 2009). Machiavellians are manipulative and tend to act in their own self-interest (Dahling et al., 2009). When faced with self-directed antiepidemic public health messages with a threat appeal, individuals with high (vs. low) levels of Machiavellianism may feel greater fear and engage in more positive avoidance behavior. However, we anticipated that morality would not have a strong binding force on Machiavellians faced with other-directed threat information. Following personality trait theory (Cattell, 1946), we believe that it is important to explore Machiavellianism and outcome orientation in the context of epidemics.

According to the extended parallel process model (EPPM; Witte, 1992) audiences assess the threats (perceived severity and susceptibility) and performance (whether threats can be avoided by using risk control methods like changing beliefs/attitudes or accepting recommended behaviors) of a fear appeal. Thus, we expected that self-directed outcome messages with high perceived threat levels would activate the desire to avoid harm among recipients high in Machiavellianism.

Finally, we used hypothetical distance to test the interference effect of susceptibility on the effectiveness of the interaction between Machiavellianism and antipandemic intention. We expected that people with high Machiavellianism would feel a greater threat in the self-directed scenario when the hypothetical distance was close (high probability of harm) than in the far hypothetical distance scenario, so that their antiepidemic intentions would be stronger in the former condition.

Literature Review and Hypotheses

Theoretical Overview

Over the past 70 years, fear-appeal theories have evolved from the earliest drive theories (see, e.g., Hovland et al., 1953) to Witte's (1992) EPPM. In the EPPM, external stimuli, individual differences, and perceived severity are regarded as important factors affecting fear perception (Witte & Allen, 2000). *External stimuli* refer to the characteristics of the fear-appeal information itself, such as the type of threat (Burgers & Veldhuis, 2013; Whitehill King & Reid, 1990) and the duration (Smith & Stutts, 2003). *Individual differences* relate to the characteristics of each information transmitter and receiver. Researchers have found that recipients' characteristics, such as cultural orientation (individualistic/collectivistic), influence the effect of a fear appeal (Miller et al., 2007). Personality is also an important factor relevant to epidemiology and public health communication in a contagious disease context. Blagov (2020) introduced the dark personality triad into the study of public health messages during the COVID-19 pandemic. Additionally, in the context of information processing, in the EPPM a *threat* is defined as the known or unknown danger and harm in one's environment (i.e., the perception of the threat, rather than the actual threat).

In this study we took the two different direction outcomes as the dependent variable, Machiavellianism as a moderating variable, and perceived severity of the threat as a mediator in our examination of the interactive effect of the direction of the outcome and Machiavellianism on antipandemic intention. In general, we expected that these factors together would constitute a moderated mediation model.

Effect of Self- Versus Other-Directed Outcomes on Fear Effectiveness

Whereas self-directed messages portray an outcome to those who engage in hazardous behavior (e.g., a fatal accident resulting from drinking alcohol and driving), other-directed messages emphasize the outcome for others (e.g., injury to passengers of the drunk driver; Burgers & Veldhuis, 2013). Miller et al. (2007)

demonstrated that individualists fear a threat to themselves more than a threat to their family, whereas the opposite is true for collectivists. However, Whitehill King and Reid (1990), who studied public health messages designed to discourage young adults from driving after drinking alcohol, found that self- and other-directed threats are equally persuasive. Similarly, Burgers and Veldhuis (2013) observed no difference between self- and other-directed outcomes in adolescent message recipients' perception of the severity and susceptibility of a threat. Overall, different conclusions have been reached about the influence of self- vs. other-directed outcomes on the effectiveness of fear-appeal messages. Therefore, we first explored the influence of external stimuli (self- vs. other-directed outcomes) in the new context of epidemic prevention.

Machiavellianism and Self- Versus Other-Directed Outcomes

Trait activation theory (Tett & Burnett, 2003) suggests that there is a direct link between personality traits and trait-relevant intentions. High Machiavellianism has been linked to a lower likelihood of complying with restrictions to reduce the spread of COVID-19 (Zajenkowski et al., 2020). In contrast, Blagov (2020) demonstrated a nonsignificant correlation between Machiavellianism and the intent to knowingly expose others to risk. Although these scholars conducted preliminary explorations of the relationship between Machiavellianism and disease transmission, the individual difference variable of Machiavellianism was not reflected with regard to whether the information variable in communication was self- or other-directed.

Studies have shown that people high (vs. low) in Machiavellianism are manipulative and less likely to follow established rules (Castille et al., 2018). However, we suggest that this understanding of Machiavellians is overly broad. In fact, they may act ethically as long as they can benefit from doing so. The utilitarian morality of Machiavellians tends to lead them to do whatever is required to achieve their goals. Their decision to follow organizational norms or break free from situational constraints is determined by whether they can meet their own interests by doing so (Castille et al., 2018). Further, when the interests of Machiavellians are in line with the normative direction of an organization, they usually engage in pro-organizational behavior (Castille et al., 2018). Therefore, we speculated that the form of interest presented by fear information would interact with the level of Machiavellianism to impact on the effectiveness of antipandemic messages.

In the scenario of a self-directed outcome, the content of a message is closely related to the individual's own interests. If the individual does not comply with organizational regulations, they may cause harm to themselves. Therefore, we anticipated that Machiavellians would have a more positive antiepidemic behavioral intention. However, in the scenario of an other-directed outcome, the content of the message requires individuals to regulate their own behavior for the benefit of others. This conflicts with Machiavellians' value orientation and behavioral characteristics. Thus, we anticipated that their antiepidemic behavioral intention would be low.

Previous researchers have measured the psychological effect of advertising through variables such as cognition, attitude, and buying intention (Liu et al., 2020; Nysveen & Breivik, 2005). Because it is difficult to measure advertising awareness in the antipandemic situation, we adopted the EPPM concept of antipandemic intention as the measurement standard. Our hypotheses were as follows:
Hypothesis 1: In a self-directed outcome scenario, participants with higher (vs. lower) Machiavellianism will show more positive antipandemic intentions.
Hypothesis 2: In an other-directed outcome scenario, participants with lower (vs. higher) Machiavellianism will show more positive antipandemic intentions.

Perceived Severity and Hypothetical Distance

Threat assessment affects the persuasive effect of fear demands (Witte, 1992). Because there are individual differences in values, social relations, behavioral patterns, and other aspects, recipients' assessment of the degree of threat presented by a situation vary with regard to danger control processes, and their coping

behaviors are also different (Mowen et al., 2007).

Despite the involvement of the personal factors described above, studies based on the EPPM (Witte, 1992) have mainly focused on the impact of recipients' perception with regard to the severity and susceptibility of a threat (Li & Huang, 2020). In a school-based study of a program for human immunodeficiency virus prevention, Wakai (2007) demonstrated that perceived severity was associated with a strong abstinence intention among Nepalese male adolescent students. Further, Bonar and Bohnert (2016) found that the perceived severity of overdosing was one of several factors associated with protective behaviors that can decrease the likelihood of overdose among users of injected drugs. Therefore, we formed the following hypothesis:
Hypothesis 3: Perceived severity will mediate the interactive effect of the direction of the outcome of a fear-appeal message and Machiavellianism on antipandemic intention.

We used perceived severity to assess the impact of information composition on message recipients' threat severity assessment for the two outcome directions. However, threat susceptibility is another dimension of threat assessment that has received little research attention. *Hypotheticality* denotes the certainty of an event, insofar as an uncertain event is perceived as more distant than a certain event. The degree of certainty of a scenario occurring is highly correlated with the perceived susceptibility of the message recipient. The greater (less) the uncertainty of the danger, the greater (less) is the perceived susceptibility of the recipient (Trope & Liberman, 2010). Chu and Yang (2019) demonstrated that a perception of increased hypothetical distance of negative events leads to an increase in *concrete emotions* (e.g., fear and worry), that is, those emotions that have a significant, predictable impact on behavior. Hypothetical distance has also been found to mediate the relationship between COVID-19 pandemic perceived severity and social anxiety (Zheng et al., 2020). Thus, we introduced hypothetical distance into our research model to examine its influence on the proposed interaction.

We believed that in the context of self-directed antipandemic messages, a closer hypothetical distance (higher probability of harm) would lead to greater threat susceptibility and a subsequent increase in recipients' perceived threat severity. Therefore, people with high Machiavellianism would recognize that they were in danger and would have an active desire to fight the epidemic to avoid the threat. In contrast, the farther away is the hypothetical distance, the less it has to do with the individual's own interests. People high (vs. low) in Machiavellianism who tend to ignore morality and pragmatism are more likely to be negative about antipandemic messages (Zajenkowski et al., 2020). In contrast, in the other-directed outcome scenario we anticipated that the level of Machiavellianism would not have a significant impact on antipandemic intention, and hypothetical distance would not have an interference effect. Thus, we formed the following hypotheses:
Hypothesis 4: In a self-directed outcome scenario Machiavellianism will interact with hypothetical distance, which will have an impact on the effective communication of antipandemic messages.
Hypothesis 4a: For participants with high Machiavellianism the condition of a closer hypothetical distance will generate a more positive antipandemic intention than will the condition of farther hypothetical distance.
Hypothesis 4b: For participants with low Machiavellianism the hypothetical distance will not make any difference to their antipandemic intention.

Figure 1 shows the general research structure.

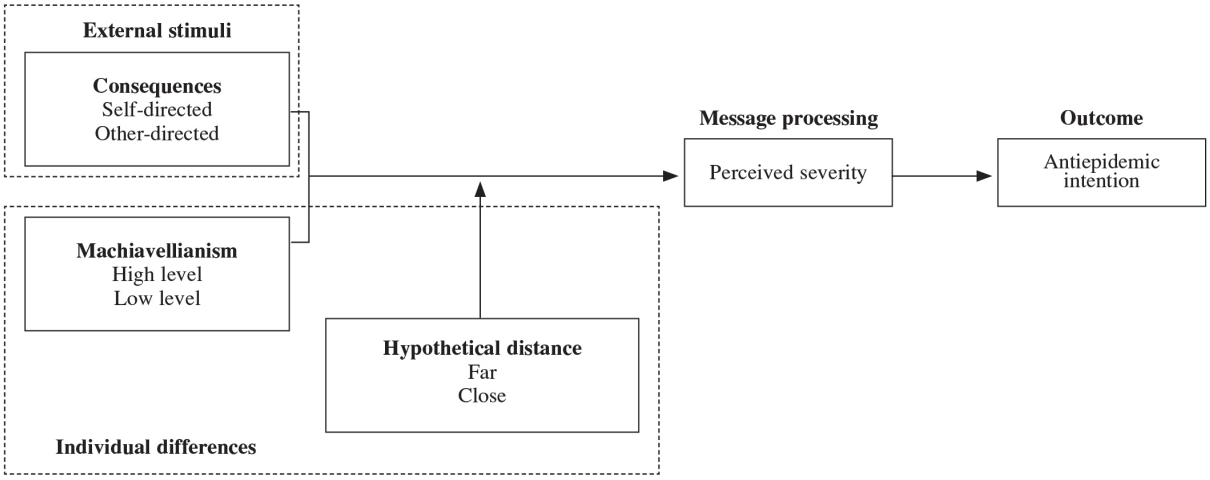


Figure 1. *Research Structure*

Method

Participants

We collected data for quantitative testing of the research model via a 10-minute web-based survey hosted on WJX (https://www.wjx.cn/). The respondents received USD 2.00 as compensation. The first cases of COVID-19 were reported in Wuhan, China, where the government issued a stay-home order for residents for 3 months from January–April 2020. Therefore, we conducted our survey with residents of Wuhan and collected data from March 18–25, 2020. A preverification condition was established for the questionnaire ("Are you currently living in Wuhan?"). Participants were informed about the end use purposes of the data.

After we had eliminated responses from non-Wuhan Internet protocol addresses, 303 people reached the end of the survey. Of them, 285 passed the validity check, 267 passed a completion time check, and 241 fully completed all items (48.18% men, 51.82% women; M_{age} = 29 years, *SD* = 4.50, range = 24–35). The majority (60.1%) of respondents were employed full-time, 22.1% were graduate and undergraduate students, and the remaining 17.8% selected "other" as their employment status.

Procedure

The experiment involved two manipulated factors (outcome: self-directed, other-directed; hypothetical distance: close, far) and one measured factor (Machiavellianism, continuous). Previous research has shown that the use of written descriptions and images in fear-appeal messages can have a combined effect on cigarette smokers' appraisal of threat for smoking outcomes (Kees et al., 2006). We employed a professional graphic designer to develop the four antipandemic message conditions: (A) self-directed outcome/far hypothetical distance, (B) self-directed outcome/close hypothetical distance, (C) other-directed outcome/far hypothetical distance, and (D) other-directed outcome/close hypothetical distance. Participants were invited to complete the questionnaire after viewing an antipandemic advertisement. In the self-directed outcome conditions, the headline greeting in the message was "It's better to wear a mask than a ventilator; it's better to lie down at home than in the ICU." The headline greeting in the other-directed outcome conditions stated, "If you don't wear a mask, you are utterly devoid of conscience about your own parents."

Next, we manipulated the hypothetical distance in a similar manner to Polman et al. (2018). The messages

"80% infection risk for catching COVID-19 without wearing a mask" and "20% infection risk for catching COVID-19 without wearing a mask" were used as the close and far hypothetical distances. After the survey, we informed participants that these were invented experimental scenarios to avoid giving them false COVID-19 guidance.

Measures

First, we tested the manipulation valance. To test the outcome direction valance, the participants' reactions were assessed ("This advertisement makes me realize that failing to take preventive measures is more harmful to oneself than to others"). To test the hypothetical distance valence, the participants were asked to respond with their distance perception ("If I don't take preventive measures, I will easily catch COVID-19"). Participants then gauged their perceived severity of the pandemic with three items (α = .88) modified from Rothman et al. (1993). A sample item is "Are you concerned about catching COVID-19?" After that, antipandemic intention was assessed with three items (α = .81) adapted from Flora and Maibach (1990). A sample item is "This advertisement made me learn more about COVID-19." Next, we used Dahling et al.'s (2009) 16-item scale (α = .87) to assess the construct of Machiavellianism. A sample item is "I am willing to be unethical if I believe it will help me succeed." Finally, participants indicated their gender, age, and education level as control variables. All items were rated on a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly disagree*).

Results

Manipulation Check

As expected, the self-directed outcome manipulation resulted in stronger self-danger perceptions than did the other-directed outcome manipulation (M = 5.53, SD = 1.14 vs. M = 4.48, SD = 1.16), b = 2.28, $t(239)$ = −6.15, $p < .01$. In addition, the far hypothetical distance manipulation resulted in farther distance perceptions than did the close hypothetical distance (M = 4.83, SD = 1.25 vs. M = 3.03, SD = 0.84), $t(239)$ = 4.90, $p < .01$.

Antipandemic Intention

We mean centered the Machiavellianism scores, then divided participants into two groups: high (low) Machiavellianism indicates 1 SD above (below) the mean (Aiken & West, 1991).

A 2 (outcome: self-directed, other-directed) × 2 (Machiavellianism: high level, low level) × 2 (hypothetical distance: far, close) analysis of variance of antipandemic intention revealed a primary three-way effect, $F(1, 233)$ = 5.07, p = .02, and was qualified by the predicted interaction between outcome direction and degree of Machiavellianism, $F(1, 233)$ = 60.37, $p < .01$. Specifically, as expected, in the self-directed outcome condition (see Figure 2), participants with low Machiavellianism responded with a weaker antipandemic intention than did participants with high Machiavellianism (M = 3.82, SD = 0.83 vs. M = 5.23, SD = 0.91), $F(1, 237)$ = 94.19, $p < .01$. However, there was no significant difference in antipandemic intention in the other-directed outcome condition according to low versus high level of Machiavellianism (M = 4.54, SD = 0.69 vs. M = 4.35, SD = 0.77), $F(1, 237)$ = 1.63, p = .20. Thus, Hypothesis 1 was supported but Hypothesis 2 was not.

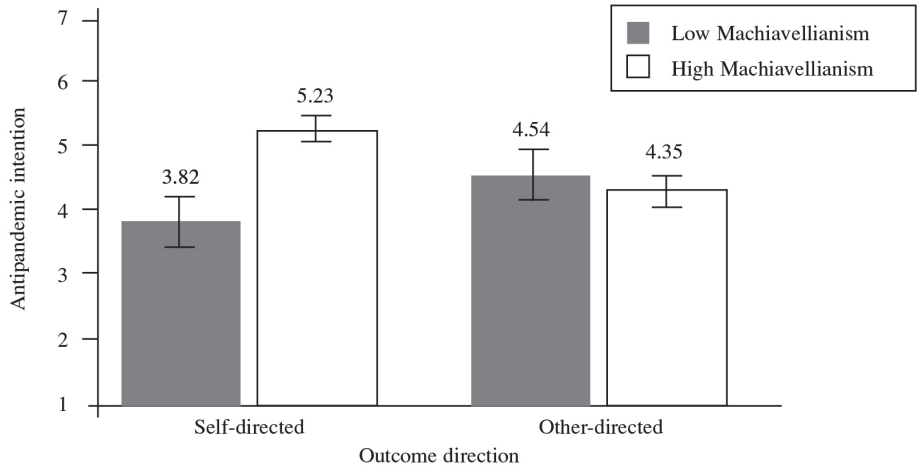
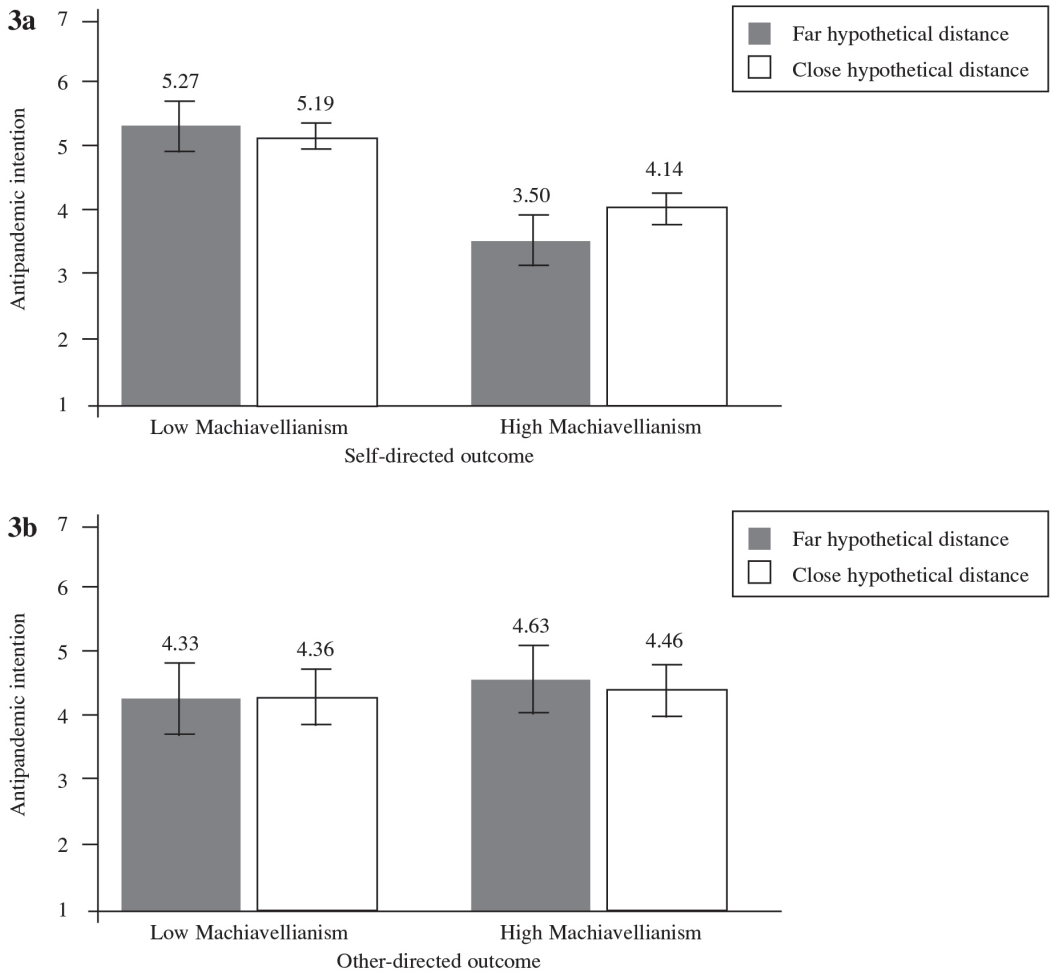


Figure 2. *Mediating Effect of Antipandemic Intention in the Relationship Between Outcome Directions and Machiavellianism*

Additionally, there was a significant interaction between degree of Machiavellianism and hypothetical distance in the self-directed outcome condition, $F(1, 237) = 6.34$, $p = .01$, but not in the other-directed outcome condition, $F(1, 237) = 0.50$, $p = .48$. We then undertook a post hoc analysis for the self-directed outcome condition (see Figures 3a and 3b). Participants high in Machiavellianism responded with a stronger antipandemic intention when the hypothetical distance was close than when the hypothetical distance was far off ($M = 4.14$, $SD = 0.69$ vs. $M = 3.50$, $SD = 0.86$), $F(1, 237) = 8.66$, $p < .01$. Participants low in Machiavellianism showed no significant differences in antipandemic intention for close versus far hypothetical distances ($M = 5.19$, $SD = 0.96$ vs. $M = 5.27$, $SD = 0.85$), $F(1, 237) = 0.13$, $p = .72$. These results supported Hypotheses 4a and 4b.



Figures 3a and 3b. *Antipandemic Intention as a Function of Outcome Direction, Machiavellianism Level, and Hypothetical Distance*

Perceived Severity

To test perception of severity we performed a regression analysis employing PROCESS Model 8 in SPSS (Hayes, 2013) with 5,000 bootstrapped resamples and 95% confidence interval (CIs; see Figure 4). First, we regressed state dominance on the outcome direction, mean-centered Machiavellianism scores, and examined the interaction of these two factors. The outcome direction significantly predicted perceived severity, $b = 0.47$, $t(237) = 3.65$, $p < .01$, 95% CI [0.78, 2.61], and the outcome direction × Machiavellianism interaction also significantly predicted perceived severity, $b = 0.29$, $t(237) = -3.27$, $p < .01$, 95% CI [−1.53, −0.38]. Second, we regressed antipandemic intention on perceived severity, the outcome direction, mean-centered Machiavellianism scores, and the interaction of the latter two factors. Perceived severity significantly predicted antipandemic intention, $b = 0.21$, $t(237) = -6.92$, $p < .01$, 95% CI [−1.84, −1.03]. Third, the bootstrapping analysis results reveal that perceived severity mediated the interactive effect of outcome direction × Machiavellianism on antipandemic intention, 95% CI [−0.33, −0.04].

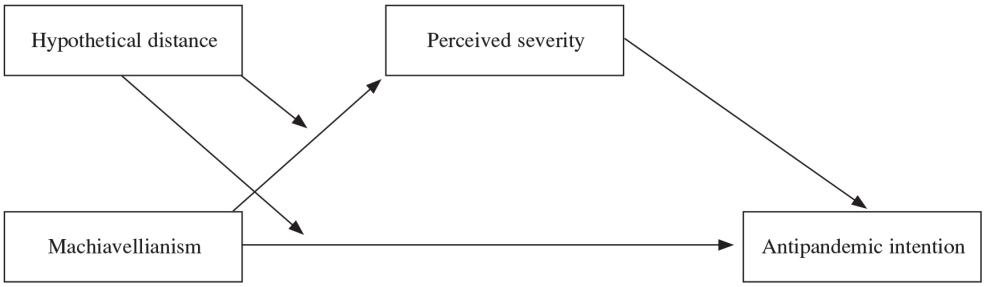


Figure 4. *Conceptual Diagram of Regression Analysis*

Discussion

Theoretical Implications

Our results in this research provide converging evidence for our central premise (Hypothesis 1) that Machiavellianism would interact with direction outcome in its impact on response to fear-appeal messages about the COVID-19 pandemic. Specifically, we did not observe a significant effect of difference in outcome direction on participants' antipandemic intention. This result supports those of Burgers and Veldhuis (2013) but is contrary to the finding of Miller et al. (2007). Our findings indicate that unilaterally manipulating changes in the outcome direction alone cannot effectively explain the behavior of the audience receiving the message.

Individuals high in Machiavellianism responded with a stronger antipandemic intention to a self-directed outcome message than to an other-directed outcome message. Our interaction effect results explain the path of predicting the effectiveness of antipandemic messages by linking the type of presentation used for fear-appeal information with personality and psychological differences, within the scenario of a new epidemic. This research adds to the literature on fear-appeal messages. However, contrary to our expectation, we found that there was no difference in antipandemic intention between participants with high and low Machiavellianism when the message had an other-directed outcome. Because in our experiment the person who was likely to be infected was close to the message recipient (i.e., they lived together or met frequently), our respondents may have considered that not completely complying with the action proposal would bring collateral damage to themselves as well as to the other person. Therefore, people with high Machiavellianism would not deliberately violate the preventive measure that was advocated for in the other-directed outcome scenario.

To extend the limited extant research on personality in the epidemic prevention context, we examined the role of Machiavellianism in the effectiveness of fear-appeal messages. Compared to the two dark traits of narcissism, which involves more exhibitionism and less disinhibition than Machiavellianism, and psychopathy, which is characterized by unempathetic callousness, we expected the dark trait of Machiavellianism to have a more significant influence on the behavior of the recipients of a fear-appeal message. The reason for our assumption is that Machiavellian (vs. narcissistic or psychopathic) individuals are more result-oriented and focus more on their own interests. The results confirm the existence of this main effect. To rule out the similarity of narcissism, psychopathy, and Machiavellianism, we conducted an additional supplementary experiment with 131 participants (51.2% men, 48.8% women; M_{age} = 27.5 years, SD = 3.21, range = 24–36) and found only weak interactions between direction outcomes and the two elements of narcissism, $F(1, 237) = 0.23$, $p = .63$, and psychopathy, $F(1, 237) = 0.27$, $p = .10$. (The authors can be contacted for more details about the supplementary experiment.) Overall, our observation of the role

of Machiavellianism in pandemic prevention messages partly supports the findings of Blagov (2020), who demonstrated that the dark traits of Machiavellianism and psychopathy both predict low endorsement of health behaviors and the intent to knowingly expose others to risk. The results of this study further indicate the importance of considering the dark triad when conducting scenario studies of health transmission.

On the basis of our results, we can conclude that perceived severity mediates the interactive effect of outcome direction and Machiavellianism on antipandemic intention. We have provided the first direct evidence for the links between Machiavellianism, direction outcome of fear-appeal messages, and perceived severity. The findings of this study are consistent with the original EPPM (Witte, 1992). Because the probability of being threatened or harmed is the key to susceptibility, susceptibility is an interference factor in threat assessment (Li & Huang, 2020). Thus, we introduced hypothetical distance as a moderating element. Hypothetical distance is often used in studies of shopping strategy (Polman et al., 2018), but it has not been considered in nonprofit marketing strategies. We found that in self-directed threat situations, Machiavellianism interacted with hypothetical distance to influence the effective communication of antipandemic messages. Thus, our results help to further understanding of the psychological mechanism and boundary constraints of fear-based communication.

Practical Implications

Tests of the ability of personality theory to inform the tailoring of effective communication in applied contexts have received scholarly attention recently (Blagov, 2020). Our research findings offer implications for planning of advertising in regard to engaging in psychographic segmentation. When fear-appeal public health message tactics are being formulated, the level of Machiavellianism of the target audience should be considered. Those high in Machiavellianism are usually in pursuit of power, fame, and wealth, and are good at developing strategies and business decisions; therefore, they are inclined to be leaders, such as politicians, business managers, and chief executives (Corzine et al., 1988). Advertising with a self-directed outcome is more effective for arousing their emotions and guiding their behavior than is advertising with an other-directed outcome. Therefore, advertising aimed at these respondents should present claims related to the recipients' interests.

At the same time, the effectiveness of fear-appeal advertising can be enhanced by increasing the severity perceived by the audience, deliberately making the audience feel threatened, and hypothetically moving closer to them. In informative messages for disease prevention, the amount of information focused on perceived harm (vs. other content) can be adjusted to improve the transmission efficiency.

In addition, managers can take advantage of information asymmetry to reduce the audience's cognition of events, for example by focusing on self-directed threats when targeting individuals high in Machiavellianism to enhance the effectiveness of fear arousal. The higher the probability of uncertainty, the higher is the complexity and unpredictability. People often fear unknown events (Cao et al., 2007). Thus, adjusting the hypothetical distance to make it closer can arouse greater fear in the audience and enhance the persuasive power of a message.

Study Limitations and Future Research Directions

This research has several limitations. First, we used threat orientation as the classification criterion of fear-appeal messages. There seems to be no shortage of research opportunities to link with other categories, such as the threat duration (Smith & Stutts, 2003) of fear-appeal messages and recipients' individual differences. Cultural orientation is an important indicator that can predict the level of fear evoked by threats in fear-appeal messages. The respondents in this study were residents of Wuhan, China, which is a country with a collectivist cultural orientation. Chinese people's perception of threat type orientations differs from that of people in countries with an individualistic cultural orientation (Miller et al., 2007). Thus, future studies could apply our research framework in a cross-cultural context to verify the impact of cultural orientation.

Furthermore, we used hypothetical distance to explore threat susceptibility. However, Bar-Anan et al. (2007) found that the four dimensions of psychological distance have a common meaning for cognition at both conceptual and application levels. Therefore, we may have underestimated the importance of the other three dimensions to the perceived threat susceptibility of our audience, which may have led to incomplete research conclusions.

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