

First-Person Influences on Third-Person Perceptions

Xinshu ZHAO¹, Xudong LIU², Yue Selene CHEN³,
Wen Aquamarine JIAO³, Song Harris AO⁴, Fuyuan SHEN⁵, Zhilong George ZHAO³

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1. Chair Professor, Department of Communication, Faculty of Social Sciences, University of Macau, and Professor Emeritus, School of Media and Journalism, University of North Carolina at Chapel Hill.
2. Associate Professor, Faculty of Humanities and Arts, Macau University of Science and Technology.
3. Doctoral Candidate, Department of Communication, Faculty of Social Sciences, University of Macau.
4. Postdoctoral Fellow, Department of Communication, Faculty of Social Sciences, University of Macau.
5. Professor and Department Head, Bellisario College of Communications, Pennsylvania State University

Correspondence: Xinshu Zhao (xszhao@um.edu.mo) or Xudong Liu (xdliu@must.edu.mo)

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Abstract

This study assessed the third-person perceptions (TPP) regarding attitude and knowledge among journalists in China and explored factors that may affect such perceptions. Based on a stratified sample of media professionals in two different regions, it was found that TPP regarding attitude was present and stronger than TPP regarding knowledge. The results also revealed that the media environment affected TPP regarding knowledge, while political identity and perceived news quality (PNQ) affected TPP regarding attitude. In addition, the study found that key personal factors interacted with each other in affecting TPP through the mediation of two components, the perceived effect on others (PEO) and the perceived effect on self (PES). The theoretical and methodological implications are discussed.

First-Person Influences on Third-Person Perceptions

The notion of third-person perception (TPP) hypothesizes that people tend to perceive larger media effect on others than on themselves, especially when the content of the message is socially undesirable (e.g., Davison, 1983; Golan & Day, 2008; Liu & Lo, 2014; Lo & Wei, 2002; Perloff, 1993, 1999), for example, showed that parents perceived greater effects of cyberbullying on other children than their own. Wei & Lo (2007) found that students perceived a greater harmful effect of negative political attack ads in the 2004 US presidential election on others than on themselves. In addition to socially undesirable messages, relatively neutral content can also lead to TPP. Yin et al. (2020) found that news reporting of Taiwan General Election in 2016 has greater impacts on people supporting other parties than themselves.

Since Davison (1957, 1983a), media professionals and students have often been studied for TPP. Chinese media differ from their western counterpart both in ideology and practice. Unlike Western media, whose stated mission is often to inform the public, the decreed mission of the Chinese media is to persuade the public on behalf of the ruling party, the Chinese Communist Party (CCP). The media are said to be the Party's "throat and tongue" (*hou-she*), or mouthpiece (Chan et al., 2004; Hassid, 2011). Although media reform in the 1980s granted media organizations a higher degree of freedom than before, the "Party Principle" (*dang-xing-yuan-ze*) still dominates content selection, giving the Party-controlled government the ultimate power (Pan, 2000; Zhao, 2004; Zhao et al., 1994).

Accordingly, the Party and the government, the two-in-one owner of all Chinese media organizations, decree that the main mission of the media is to explain and rally support for the official policies (Guan et al., 2017; Zhao et al., 1994). It would therefore be important to investigate whether Chinese media professionals consider others more affected than themselves as well as the mechanisms underlying such third person effects, if any. In

addition, due to journalists' presumed role of delivering meaningful messages to the public (Nisbet & Fahy, 2015; Wihbey, 2017), we proceed to analyze how journalists evaluate the media's influence on their own and other people's knowledge about the society. Research on TTP typically focused on presumed media effect concerning attitudes(for review, see Sun et al., 2008), while little research has observed TPP about knowledge. A comparison of TPP of knowledge and of attitude will shed light on how TPP works and the psychological mechanisms underlying these effects.

Hypotheses and Research Questions about Third-Person Perception (TPP)

The original TPP hypothesis was concerned with perceived effects on attitudes (Davison, 1983b). Davison (1957) observed journalists' perceptions that messages affected ordinary readers' attitudes more than journalists' own. Merton (1968) reported that people attributed other-self differences in attitudes to mass media outlets' brainwashing of the others. Perloff (1989) reported that respondents believed that media coverage of issues in the Middle East would cause neutral viewers' attitudes to become less favorable toward the respondents' positions.

The findings have been explained by three social psychological processes, i.e., social desirability, social distance, and the Lake Wobegon effect (Kruger, 1999; Perloff, 1999). People tend to think of themselves as more capable, ethical, learned, intellectual, etc., than others. As it is respectable to have an independent mind, people tend to think that others' attitudes and opinions are more easily swayed by persuasion than their own.

The respect for independence may not cover information acquisition. There has been no consensus that independent-minded people should not acquire knowledge from the media. On the contrary, across social systems and cultures, providing truthful information has been said to be among the most respectable functions of the media. As social undesirability should

be weaker for acquiring knowledge from the media than adopting attitudes of the media, we may predict weaker TPP regarding knowledge than TPP regarding attitude.

A number of studies treat self-perceived knowledge as a first-person factor predicting TPP (Davison, 1983a; Driscoll & Salwen, 1997; McLeod et al., 1997; Perloff, 1999; Wei et al., 2008; Wei & Lo, 2007), but ignore that the TPP may also exist in the knowledge acquisition processes from media. In other words, people may be more confident in their own ability to acquire valid and useful knowledge from media than others (Salwen, 1998). Few studies measured TPP and its mechanisms regarding knowledge. As journalists are professional carriers of information that the public may turn into knowledge (Nisbet & Fahy, 2015; Wihbey, 2017), journalists' perception of their own influence on the public's knowledge warrants scholarly attention.

Accordingly, we propose the following hypothesis and research question:

- H1:** Journalists would perceive larger media effects on the public's attitude than on their own attitude.
- H2:** TPP regarding attitude is stronger than TPP regarding knowledge such that the respondents' other-self differentials regarding attitude are stronger than the differentials regarding knowledge.
- RQ1:** Will respondents perceive larger media effects on the public's knowledge than on their own knowledge?

Research Questions about First-Person Influences on Third-Person Perceptions

TPP is a perception of the first person. Understanding the effects of First Person Factors (FPFs), namely the individual characteristics of the people holding the perception, should help understand how and why TPP differs between individuals. Driscoll and Salwen (1997) identified age as one of the FPFs and reported that the elderly were less likely to manifest TPP. Huh et al. (2004) showed that education level and informational value may

affect the perceived effect of advertising. Schmierbach and colleagues (2011) found TPP to be greatly diminished among heavy players of video games compared to light and medium players.

This study seeks to explore the effect of three FPFs—namely media environment, political identity, and perceived quality of news reporting—on TPP. Each of these FPFs is from one level of personal traits, i.e., physical location, political identity, and psychological perception. While research has shown that TPP increases with the greater social distance between the first and the third persons, these FPFs represent aspects of social distance, thereby affecting TPP (Cohen et al., 1988; Eveland & McLeod, 1999).

Media Environment (MDE)

Despite the proclaimed role of the media to serve the political missions of the governing party, the media environments differ between regions in China (Chan et al., 2004; Guan et al., 2017; Hassid, 2011), where “media environment” refers to social and political settings under which the media and media professionals operate. The macro media environment in China may be divided into “media highlands,” namely a few mega cities exemplified by Beijing as the capital, and the vast “peripheral sphere” in the rest of the country (Berkowitz, 1997; Li & Liu, 2010; Huang, 2012). With the highest concentration of media professionals and media organizations, Beijing produces more national and international news than any other Chinese cities or provinces. The Chinese government controls all media organizations in China by decrees through its Propaganda Department, headquartered in Beijing. Beijing’s media environment is often described as news-propaganda oriented (Zhao et al., 1994). This study chose Beijing to represent a *politically oriented environment*.

Hunan was chosen for being the opposite of Beijing in terms of the media environment. Hunan Satellite TV, a multimedia conglomerate, is number one in producing

successful television series, reality shows, and other entertainment content (Huang, 2012). Hunan is also a farming and heavy industry powerhouse. The settings where journalists cover news stories could evaluate their work in a different way. Journalists in political center may pay more attention to media influence on the public than their peers in a politically peripheral province. In a politically oriented environment, political objectives (i.e. guiding public opinions) shape the work of the journalists more than commercial concerns, according to journalists' own reports (Han & Lin, 2021). But scant research directly examined the effect of media environment on journalists' perception of their work's influence on the public or on themselves. Considering the contrast that the two locals provide, we pose the following question:

RQ2: Does media environment (MDE), represented by Beijing vs. Hunan, affect third-person perception? How?

Political Identity (PID)

Political identity is often operationalized in terms of membership in political parties or groups (Delman & Yin, 2008). Political identity affected TPP of Australian college students (Duck et al. 1995). Greek respondents believed the media coverage of the 2004 national election had a greater impact on members of outgroups than on members of ingroups (Gardikiotis, 2008). Respondents to Jang and Kim's (2018) study perceived greater influence of fake news on members of different parties than on members of their own parties.

In China, CCP membership is a symbol of integrity and competence besides political conviction, loyalty, and obedience (Bian et al., 2001; Rosen, 1990; Zhao, 2004). Journalists are encouraged to join CCP, which is in line with the traditional "mouthpiece" role of the media (Chan et al., 2004; Hassid, 2011). Therefore, this study attempts to address the question:

RQ3: Does political identity (PID), represented by CCP membership, affect the journalists' third-person perceptions? How?

Perceived News Quality (PNQ)

Prior research showed negative effects of quality or perceived quality of message on TPP. Weaker arguments led to stronger TPP (Gunther & Thorson, 1992; White, 1997). Those who think more highly of advertisement quality tended to think of themselves as more vilified by the ads (Duck et al., 1995). Perceived credibility of milk powder scandal news was negatively related to TPP (Wei et al., 2010). We therefore ask:

RQ4: Does perceived quality of news reporting (PNQ) affect Chinese media professionals' third-person perceptions? How?

Process and Outcome of FPF→TPP Effects

The main constructs of this study appear to form a mediation model with two mediators, FPF→PEO&PES→TPP. The more recent understanding of mediation models is that the X→Y total effect does not represent “effect to mediate,” but only the outcome effect of the mediation process (Hayes, 2009; Jiang et al., 2021; Zhao et al., 2010). Applying the understanding, we consider FPF→TPP simple correlation (after controlling for possible confounds) as indicating the outcome effect of the mediation process.

The three FPF variables themselves appear to be causally linked, with the location variable preceding the identity variable, which precedes the psychological variable MDE→PID→PNQ, leading to extended mediation models, or path models, shown in Table 6. We will answer the “how” parts of RQ2, RQ3 and RQ4 with the help of these mediation/path models.

Method

Data

A survey was conducted in March 2018 in the capital city of Beijing and the southern province Hunan. With 2018 populations of 21.54 and 68.99 million, respectively, combined the two could be the 16th most populous country in the world, surpassing Germany, UK, France, or Italy (National_Statistical_Bureau_of_China, 2019). Stratified random sampling was used to select journalists, defined as people focusing on collecting or editing news for work (Chan et al., 2004), from the two locales. After compiling a list of news organizations in Beijing and Hunan, we employed simple random sampling to select 33 organizations, including newspaper, radio, television, and online news organizations. We then used simple random sampling again to select and invite 700 individuals from the staff rosters of the 33 organizations. With the assistance of research liaisons in each sampled news organization, 672 completed the online survey, yielding a response rate of 96%.

Of the 672, 51.6% were males and 48.2% were females. The average age was 34.2 years old. 67.4% held a bachelor's degree, and 7.6% held a master's or higher degree. Years of working in journalism ranged from less than a year to 38 years, averaging 10.18, $sd = 7.21$. 44.2% were CCP members (see Table 1 and Table 2 for more information about the variables).

Table 1 and Table 2 about here

Two articles in Chinese, by different and overlapping authors (X. Liu & Zhang, 2019; Peng et al., 2020), reported preliminary findings from this dataset, some of which also replicated in this conference paper. This paper, however, adds theorizing, analysis, and findings that were not previously reported in any language.

Measurements

Two matching questions and eight multiple-choice questions measured the perceived media effect on self and others' knowledge and attitude (Table 3). A 5-point Likert scale was employed, where 1 meant "no effect" and 5 meant "very strong effect." We computed the main dependent variables based on these questions. The reliability index, Cronbach's alpha coefficient, is in Table 3. For easy understanding and a more informative interpretation, all major variables were linearly transformed to 0-1 percentage scales (p_s) (Jiang et al., 2021; Zhao & Zhang, 2014). Sections I and II of the Technical Notes, attached at the end of this document, provide more information about percentage scales.

Table 3 about here

Other-Attitude (*OAtt*) & Self-Attitude (*SAtt*). To measure the perceived effect of news on others and self, we used Lo and Wei's (2002) methods. Variables *OAtt* and *SAtt* were the average of the two "other attitude" and the two "self attitude" items, respectively. The scale reliabilities, measured by Cronbach's α , were 0.799 and 0.771, respectively.

Other-Knowledge (*OKno*) & Self-Knowledge (*SKno*). The variables of *OKno* and *SKno* were computed the same way. The higher the score, the greater the impact. The Cronbach's alpha coefficient of *OKno* was 0.774 and that of *SKno* was 0.783.

3rd-Person Perception regarding Attitude (*3PA*). TPP was typically operationalized as the difference between PEO and PES. If PEO and PES were each on a 0-1 scale, the resulted TPP scale would range -1~1. We used Eq. 1 to linearly transform the scale, so as to place TPP regarding attitude (*3PA*) on a 0-1 percentage scale (p_s). Such linear transformation does not affect p -value or hypothesis tests (Jiang et al., 2021; Zhao & Zhang, 2014). See Sections I and II of the Technical Notes, attached at the end of this document, for details.

$$3PA = \frac{(OAtt - SAtt + 1)}{2} \quad \text{Eq. 1}$$

3rd-Person Perception regarding Knowledge (3PK). *3PK* was similarly defined as the difference between perceived effects on knowledge of others and self, scaled 0-1 using Eq.2.

$$3PK = \frac{(OKno - SKno + 1)}{2} \quad \text{Eq. 2}$$

Media Environment - Beijing vs. Hunan (MDE). *MDE* was a 0-or-1 dummy variable, 1 for Beijing and 0 for Hunan.

Political identity (PID). *PID* was dummy coded, 1 for Party members of Chinese Communist Party (CCP), 0 otherwise.

Perceived Quality of News Reporting (PNQ). We asked respondents to evaluate the quality of the news reporting by the organization they work for, measured on a seven-point Likert scale, linearly transformed to 0-1 percentage scale (p_s), on which 1 was the best possible quality and 0 was the worst, and 0.5 was the midpoint.

Control Variables. In addition to typical controls, such as gender, age, marriage, and education, we also asked the respondents to indicate whether they majored in journalism or took journalism course(s), their years of experience in the media business, and their salary. Each control variable was on or transformed to a 0-1 percentage scale.

Mediation Models for Other-Self Process and Outcome

While the four main constructs form a two-mediator model, $FPF \rightarrow PEO \& PES \rightarrow TPP$, the *TPP axiom*, $TPP = PEO - PES$, makes the model overidentified. The model cannot be estimated in one run. It needs to be estimated in two separate runs, one for $FPF \rightarrow PEO \rightarrow TPP$ and another for $FPF \rightarrow PES \rightarrow TPP$. Section III of the Technical Notes, attached at the end of this document, details the mathematical derivations.

The two-run model shares main characteristics of other mediation models. Chief among them, the $FPF \rightarrow TPP$ correlation represents the outcome of the mediation process just

like $X \rightarrow Y$ simple correlation does in most of other $X \rightarrow M \rightarrow Y$ mediation models. We refer to ours as *other-self process and outcome (OSPO)* model to indicate both the differences and commonalities with other mediation models.

Findings

The findings are summarized in Table 4 through Table 6. We first discuss the scales, indicators and statistical controls in these tables before discussing the findings.

Percentage Scales (p_s and p_d)

The main cells of Table 4 were on 0~1 percentage scales (p_s) or -1~1 directional percentage scales (p_d). Cell A1, for example, indicated that the respondents gave an average of .6907 points when rating media effects on others' attitudes, where 1 indicated maximum while 0 indicated minimum.

Table 4 & Table 5 about here

Regression Coefficients (b_p and β)

The main cells of Table 5 display *percentage coefficients* (b_p), a type of regression coefficients (b) when dependent and independent variables are both placed on 0-1 percentage scale (p_s) (Jiang et al., 2021; Zhao & Zhang, 2014). Each b_p indicates a percentage-point change in the dependent variable associated with a whole-scale increase in the independent variable. In Cell A1, $b_p = -.033$ indicates that, compared to males, females gave 3.3-point lower scores for the perceived effect. In A15, $b_p = .196$ represents an increase of 19.6 points in perceived effect associated with an increase in perceived news quality from the lowest to the highest. Sections I and II of the Technical Notes, attached at the end of this document,

provides more information about the effect measures we report below, especially percentage coefficient (b_p).

Percentage coefficients are cross-comparable to the extent that percentage scales are deemed equivalent to each other. Comparing A1 ($b_p = -.033$) with B1 ($b_p = -.044$), we see that gender had a 30% larger influence over the perceived effect on self than on others.

Comparing A1 ($b_p = -.033$) with A6 ($b_p = .046$), we see that taking journalism courses had a 39% larger influence than being male.

Following the more common practices of other communication studies, Table 5 also reports the standardized beta (β , in parentheses). Here we note two phenomena:

- 1) P -values and confidence intervals were not affected by linear rescaling. Each pair of b_p and β coefficients shared the same p -value and confidence interval.
- 2) While b_p and β were both products of normalization, their values often differed from each other, as shown in the main cells of Table 5.

Statistical Controls and r^2

To reduce confounding, we controlled for four common demographic variables (Table 5), then added four variables about journalism education and journalism career to the controls. The variances in the dependent variables (DV) explained by the eight controls range from 3.3% (F16) to 10.6% (B16).

Lines 10~17 of Table 5, especially the incremental r^2 in Line 17, show that the three independent variables (IV) may add predictive power on top of the control block.

Supporting H1: Third-Person Perception Regarding Attitude

Other-attitude ($OAtt = .6907$, $sd = .2060$) was higher than self-attitude ($SAtt = .6754$, $sd = .2126$, Table 4). As the difference ($TPP = .6907 - .6754 = .0153$) passed the statistical pretest (paired-samples t test, $p < .05$), Hypothesis 1 was supported: the journalists perceived that news reporting affected the public's attitudes more than their own.

Supporting H2: Stronger TPP about Attitude than about Knowledge

As predicted, the other-self differential in the perceived influences was larger on attitude than on knowledge ($.0153 - .0025 = .0128$, Table 4), and the difference (.0128) was statistically acknowledged (paired-samples t -test, $p < .05$). Hypothesis 2 was supported: TPP regarding attitude was stronger than TPP regarding knowledge.

Addressing RQ1: No Third-Person Perception Regarding Knowledge

The other-self differential for knowledge was near 0 ($3PrK = .6980 - .6955 = .0025$, Table 4 and bottom of Table 6), which failed the statistical pretest (paired-samples t -test, $p = .667$). The answer to RQ1 is no, there is not enough evidence for TPP regarding knowledge.

Addressing RQ2: Media Environment Affected TPP about Knowledge, Not about Attitude

The Hunanese showed larger TPP regarding knowledge than the Beijingers ($b_p = -.02$ on $3PK$, $p < .05$; Table 5), while the MDE effect on TPP regarding attitude was far smaller and statistically unacknowledged ($b_p = -.008$ on $3PA$, $p > .05$). The main evidence is from the comparison between $|b_p| = 0.02$ and $|b_p| = 0.008$, showing that the MDE \rightarrow 3PK effect was about 2.5 times of the MDE \rightarrow 3PA effect. The answer to the “whether” part of RQ2 is there is clear evidence for the effect of media environment on TPP regarding knowledge but not enough evidence for the effect regarding attitude.

The “how” part of RQ2 now includes several sub-questions.

1. *How did MDE fail to affect 3PA?* The answer lies in a weak competition between the positive indirect effect through PNQ ($-.097 \times -.070 = .00679$, $p < .01$; Cell A2 of Table 6) and the negative direct effect ($-.014$). Even though the direct effect failed the statistical test (p

> .05), it was large enough to overwhelm the statistically acknowledged indirect effect to make the $MDE \rightarrow 3PA$ total effect negative ($-.008, p > .05$; Cell A3 of Table 6).

2. *How did MDE affect 3PK?* The answer lies in the even stronger direct effect ($-.023, p < .01$; Cell K2 of Table 6) and much weaker indirect effect ($-.097 \times -.028 = .00272, p > .05$) through PNQ . The indirect effect was too weak to make a dent in the direct effect, allowing the $MDE \rightarrow 3PK$ total effect to pass the statistical threshold ($-.020, p < .05$; Cell K3 of Table 6).

3. *What was the process behind the (MDE \rightarrow 3PK)/PNQ direct path?* Now that the direct path was the main force, we probe further about the process behind. The answer lies in the $MDE \rightarrow EOK$ and $MDE \rightarrow LSK$ comparison: the Beijingers perceived weaker media effect on the public regarding knowledge than the Hunanese did ($b_p = -.039, p < .05$; Cell K1 of Table 6), while the perceived effects on themselves differed little between the two groups ($b_p = -.006, p > .05$). The negative direct effect on EOK and near-zero direct effect on LSK led to a negative direct effect on TPP regarding knowledge.

FPF may affect TPP when TPP is near zero. We note that $3PK$ was near zero (RQ1) while MDE appeared to affect $3PK$ (RQ2). This is one example that a first-person factor may affect TPP at any level of TPP , including when TPP is near zero. Investigators of FPF effects on TPP need not to stop when TPP is near zero.

Addressing RQ3: Political Identity Affected TPP about Attitude, Not about Knowledge

Party members reported weaker TPP regarding attitude than non-members ($b_p = -.017, p < .05$; Table 5), while the members and non-members barely differed regarding knowledge ($b_p = -.009, p > .05$). The former effect was nearly twice the latter effect regarding knowledge. The answer to the “whether” part of RQ3 is there is evidence for the effect of political identity on TPP regarding attitude but not enough evidence for the effect regarding knowledge.

The “how” part of RQ3 now includes several sub-questions.

1. *How did PID affect 3PA?* The answer lies in a weak complement between the indirect effect through *PNQ* ($.049 \times -.070 = -.00343$, $p < .01$; Cell A2 of Table 6) and the direct effect ($-.013$), both of which were negative. Even though the direct effect was statistically unacknowledged ($p > .05$), it was large enough to help the statistically acknowledged indirect effect, pushing the *PID*→*3PA* total effect pass the statistical threshold ($-.017$, $p < .05$; Cell A3 of Table 6).

Now we may address an extension of RQ2 and RQ3: Why political identity appeared to affect TPP re attitude while media environment failed to do the same, when their direct effects appeared almost identical ($-.014$ and $-.013$, Cell A2 of Table 6)? The answer lies in their opposite effects on perceived news quality (*PNQ*) – the political identity’s negative effect led to a complementary mediation that strengthened its total effect on 3PA, while the media environment’s positive effect on *PNQ* led to a competitive mediation that weakened the total effect.

2. *How did PID fail to affect 3PK?* The answer lies in the weak direct effect ($b_p = -.007$, $p > .05$; Cell K2 of Table 6) and even weaker indirect effect ($b_p = .049 \times -.028 = -.00137$, $p > .05$). Although the two effects are in the same direction, their combination, the *PID*→*3PK* total effect, still failed to pass the statistical threshold ($b_p = -.009$, $p > .05$; Cell K3 of Table 6).

3. *How did media environment affect TPP re knowledge while political identity did not?* This is another extension of RQ2 and RQ3. The answer lies in their direct effects – media environment showed a strong direct effect ($b_p = -.023$, $p < .01$) while political identity showed a weak one ($-.007$, $p > .05$). The former was over three times of the latter.

Addressing RQ4: Perceived Quality Affected TPP about Attitude, But Not about Knowledge

Those more satisfied with news reporting (*PNQ*) reported lower *3PA* ($b_p = -.067, p < .01$, Table 5), and the effect was much larger than any other independent variables. The largest of the other FPF effects, *MDE* → *3PK* (Cell F10), sized less than one-third ($b_p = -.020, p < .05$). *PNQ* effect on *3PK* failed the statistical pretest although it was also negative ($b_p = -.019, p > .05$). The answer to the “whether” part of RQ4 is there is evidence for the effect of perceived news quality on TPP regarding attitude but not enough evidence for the effect regarding knowledge.

The “how” part of RQ4 now includes two sub-questions.

1. *How did PNQ affect 3PA?* The answer lies in the fierce competition between the two paths to TPP, the one through the perception about others and the one about self, namely *PNQ* → *EOA* and *PNQ* → *LSA*. While both effects were strong, they were in opposite directions ($b_p = .196$ vs $b_p = -.337, p < .001$ for both; A1 of Table 6). The even stronger negative effect on *LSA* overwhelmed the positive effect on *EOA* to produce a sizable and negative outcome effect ($b_p = -.070, p < .01$; A2 of Table 6). Those more satisfied with news reporting exhibited weaker TPP re attitude mainly because they perceived much stronger effects on themselves. While these journalists also perceived stronger effects on the public, the effect size was much weaker than the competing effect ($|.196|$ vs $|-0.337|$), leading to the outcome that the more satisfied exhibited weaker TPP re attitude ($b_p = -.067, p < .01$, A3 of Table 6).

Note again that *LSK* refers to the *lack* of perceived effect on the respondents (self) regarding knowledge; so positive regression coefficients all indicate positive effects on TPP, while negative coefficients all indicate negative effects on TPP.

2. *How did PNQ fail to affect 3PK?* The answer lies in the more even competition. Comparing *PNQ* effects re attitude (A1) with *PNQ* effects re knowledge (K1) as shown in Table 6, one should see two competitions, one for attitude and one for knowledge ($b_p = .196$

competing with $b_p = -.337$ and $b_p = .249$ competing with $b_p = -.306$, $p < .001$ for all four b_p coefficients). The similar effect patterns, however, featured very different effect sizes. The competition re attitude was dominated by the negative PNQ effect on LSA ($|-0.337|$ is much larger than $|.196|$), while the competition re knowledge was more even ($|-0.306|$ vs $|.249|$). The dominated competition was a main factor contributing to the negative $PNQ \rightarrow 3PA$ total effect ($b_p = -.067$, $p < .01$, A3 of Table 6), while the more even competition was a main factor leading to the much smaller and statistically unacknowledged $PNQ \rightarrow 3PK$ total effect ($b_p = -.019$, $p > .05$, K3 of Table 6).

Discussion

Main Findings

This study found evidence for third-person perception (TPP) regarding attitude, but not enough evidence for TPP regarding knowledge. The study also found TPP regarding attitude stronger than TPP regarding knowledge.

The environment is worth noting. Western media often define their mission as supplying information but refraining from manufacturing opinions. By contrast, the Chinese media are tasked with propagating both information and opinion in support of the government. While third-person perception has been documented time and again among Western journalists, it surfaced again in this study of Chinese journalists, ideological differences notwithstanding.

This study identified several first-person factors (FPFs) that appear to be related to TPP. The first is media environment. The journalists in a heavily political environment, namely Beijing, manifested weaker TPP regarding knowledge than their counterparts from an entertainment-focused environment. Beijing's media, being in the political, cultural, and economic center, enjoy easier access to timely and authoritative information. To compete for the audience, Hunan's media focus on entertainment. Different business models may have

fostered different values—Beijing’s media professionals may see acquiring information as more socially desirable than their Hunan colleagues do, which may explain the contrasting TPP tendencies.

A second FPF is political identity represented by CCP membership. Party members reported weaker TPP regarding attitude than non-members. This is consistent with earlier reports that, at grassroots of the Chinese society, political identity is more a symbol of model citizenship than a badge of political power or ideological conviction (Bian et al., 2001; Rosen, 1990; Zhao, 2004). The Party has a long history of demanding its members to practice “mass line” (*qun-zhong-lu-xian*), the Chinese version of the imperative “of the people, for the people.” The imperative may have shortened the psychological distance between the ordinary party members and the general others, lessening TPP for the Party members.

A third FPF is perceived news quality. The media professionals less satisfied with news reporting showed stronger TPP regarding attitude. The same psychological mechanism likely underlies the phenomenon that TPP appears stronger when arguments are weaker (Gunther & Thorson, 1992; White, 1997).

We looked further into the process through which perceived effects on others (*OAtt* or *OKno*) and self (*SAtt* or *SKno*) mediate the effect of FPFs (*MDE*, *PID*, or *PNQ*) on TPP (*3PA* or *3PK*). The procedure, dubbed *other-self process and outcome* (OSPO) analysis, and the two measurement devices, *percentage score* (p_s) and *percentage coefficient* (b_p), proved useful when probing how TPP or FPF effect on TPP appears or disappears.

Exploring Possible Causes Behind the Second-Level Differential

Given that TPP is an other-self differential, the difference between the two TPPs (0.0128) represents a second-level differential. Grappling with this differential, we found it intriguing: What does it tell us about the respondents’ psychology? What are the underlying causes or sources?

Table 4 lists four first-level differential perceptions as potential sources.

DP1: *Others changed attitude more than self* ($u_{os} = 0.0153, p < .05$, Cell C1, i.e., classic TPP re attitude).

DP2: *Others acquired knowledge more than self* ($d_{os} = 0.0025, p > .05$; TPP re knowledge, Cell C2).

DP3: *Others changed attitude more than acquiring knowledge* ($o_{ud} = -0.0073, p > .05$, Cell A3).

DP4: *Self changed attitude more than acquiring knowledge* ($s_{ud} = -0.0201, p < .001$, Cell B3).

The negative s_{ud} (DP4), supported by the statistically acknowledged (aka statistically significant) p value, evidence the opposite of the DP4 statement, i.e., the respondents in fact perceived they themselves acquired more knowledge than attitude. For the theory and practices related to statistical significance vs acknowledgement, see P. L. Liu et al. (2021 & 2022), Zhao (2016) & Zhao et al. (2022).

Comparing the four, one may see that the second-level differential came mostly from the perception of “self-acquired more knowledge than attitude,” the inverse of the statement (DP4), followed by TPP re attitude (DP1). Recalling the starting assumption that acquiring knowledge from the media appear more socially desirable than accepting attitudes of the media, we see that each of the three findings that passed the statistical threshold ($p < .05$) – DP1 (TPP re attitude), inverse of DP4, and the second-level differential, is in the direction of “I do good, but they do less good.” Accordingly, we name the second-level differential *auto superiority* (a_r) as discussed below.

Mathematically, auto-superiority is not just the difference at the right margin of the 2×2 table ($u_{os} - d_{os} = .0153 - .0025 = .0128$), but also the difference at the lower margin [$o_{ud} - s_{ud} = (-.0073) - (-.0201) = .0128$]. This hints that auto superiority performs a function parallel

to that of grand total or grand mean. Each of the three is a comprehensive figure that summarizes an aspect of the 2×2 table. To fully understand auto superiority, therefore, we need to examine the most foundational information of the table, the four elemental perceptions --

EP1: *Others did the undesirable* ($o_u=0.6907$, $p<.001$, Cell A1)

EP2: *Self did the undesirable* ($s_u= 0.6754$, $p<.001$, Cell B1)

EP3: *Others did the desirable* ($o_d=0.6980$, $p<001$, Cell A2)

EP4: *Self did the desirable* ($s_d=0.6955$, $p<.001$, Cell B2)

Note that s_u (.6754) stood below the average of the four (.6899, $p < .001$ for the deviation), below each of the other three elemental perceptions (o_u , o_d , s_d), and s_u 's deviation from the mean was much larger than any of the other three. The lower s_u contributes to higher auto superiority. Thus, the perception of *I-do-less-bad* (opposite of s_u) appears to have contributed more than any other elemental perceptions (o_u , o_d , s_d) to auto-superiority.

The same analysis applied to the other two findings, namely TPP (*others-do-bad-more-than-I*) regarding attitude and the inverse of DP4 (*I-do-more-good-than-bad*), showed that the *I-do-less-bad* perception was also a main contributor to the two first-level perceptions.

In summary, the respondents' perceptions about themselves contributed more than their perceptions about the general others; and their denying the socially undesirable behaviors contributed more than their claiming the socially desirable behaviors. Future studies may investigate whether the phenomenon is due to the idiosyncrasies of the time, locale, or populace of this dataset, or a part of a more general pattern.

Other-Self Desirability and Undesirability Analysis

Adding the desirability dimension may broaden the analysis, and the concept of auto-superiority provides an overarching frame for a better understanding of TPP. We thus developed a scheme for a more systematic analysis of the differential perceptions of socially

desirable and undesirable behaviors by self and others, dubbed other-self desirability-undesirability (OSDU) analysis. Section IV of the Technical Notes, attached at the end of this document, explains the scheme. This survey, summarized in Table 4, is used as an example to illustrate the scheme. The example provides additional details in support of some conclusions of this manuscript.

This study has its limitations, chief among which concerns generalizability. While the probability sampling makes the dataset representative of Beijing and Hunan journalists, the empirical interests may extend to other Chinese journalists, and the theoretical and methodological implications may concern people in general. While our findings have provided new and interesting insights to the TPP literature, they need to be replicated in the future in other population groups.

Note

The Technical Notes mentioned in this manuscript is attached at the end of this document. It is also made available at Figshare, an online open access repository, at https://figshare.com/articles/journal_contribution/Technical_Notes_on_First-Person_Influences_on_Third-Person_Perceptions/16585907 .

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Variable	Wording	Observed				Conceptual		Percentage scale (ps)			
		min	max	mean	stdv	min	max	min	max	mean	stdv
gender	What is your gender? 您的性別?	1 (male) 51.6%	2 (female) 48.2%	1.4829	.5001	1	2	0 (male) 51.6%	1 (female) 48.2%	.4829	.5001
age	How old are you? 您的年齡?	18	58	34.1490	7.9091	0	100	.18	.58	.3415	.0791
marriage	marriage status 您的婚姻狀態?	1 (no ^a) 41.5%	2 (yes) 58.5%	1.5848	.4931	1	2	0 (no) 41.5%	1 (yes) 58.5%	.5848	.4931
education	What is your highest degree? 您的最高學歷?	1	6	3.8224	.6062	1	6	0	1	.5645	.1213
journalism major	Are you majoring in journalism, mass communication or related departments? 您在大學本科主修的科系是否為新聞學、大眾傳播學或相關科系?	1 (no) 55.7%	2 (yes) 43.2%	1.4367	.4964	1	2	0 (no) 55.7%	1 (yes) 43.2%	.4367	.4964
journalism course	have you ever taken a course in journalism? 您是否曾修讀過兩新聞傳播專業相關的課程?	1 (no) 19.2%	2 (yes) 80.7%	1.8077	.3944	1	2	0 (no) 19.2%	1 (yes) 80.7%	.8077	.3944
salary	What is your average monthly income (including salary, bonus, allowance, contribution fee, year-end bonus, etc.) in the current work organization? 您在目前工作機構的每月收入(含工資、獎金、津貼、稿費、年終獎等)平均約為多少人民幣?	1	8	2.5878	1.3433	1	8	0	1	.2268	.1919
journalism experience	how many years have you been in journalism? 您從事新聞工作已有多久?	0	38	10.1800	7.2125	0	50	0	0.76	.2036	.1443

^a including unmarried, divorced and others.

Variable	Wording	Observed				Conceptual		Percentage scale (ps)			
		min	max	mean	stdv	min	max	min	max	mean	stdv
Beijing vs Hunan (MDE)	Region 所在地區	1 (Hunan) 65.2%	2 (Beijing) 34.8%	1.3482	.4768	1	2	0 (Hunan) 65.2%	1 (Beijing) 34.8%	.3482	.4768
Political identity (PID)	are you a member of Chinese Communist Party (CCP)? 您是否為中共黨員?	1 (No) 55.8%	2 (Yes) 44.2%	1.4420	.4970	1	2	0 (No) 55.8%	1 (Yes) 44.2%	.4420	.4970
Perceived news quality (PNQ)	please rate your work organization's performance in news reports, with a maximum of 100 points, a minimum of 0 points and a passing score of 60 points. What score will you give? 如果請您對您就職的工作機構在新聞報道表現上評分，最高為 100 分，最低為 0 分，您會給多少分?	1	7	5.6222	1.0741	1	7	0	1	.7704	.1790
3 rd -person perception re attitude (3PA)	differences in scores between perceived media effects on attitudes of others and themselves (TPP in attitudes) 新聞報道對他人及自己態度影響的差異 (第三人效果)	-.75	1	.0153	.1845	-1	1	.13	1	.5076	.0923
Others-attitude (OAtt)	perceived media effects on attitudes towards social events and government policies of others 新聞報道對他人態度(社會事件/政府政策)的影響	1	5	3.7626	.8238	1	5	0	1	.6907	.2060
Self-attitude (SAtt)	perceived media effects on attitudes towards social events and government policies of themselves 新聞報道對自己態度(社會事件/政府政策)的影響	1	5	3.7016	.8506	1	5	0	1	.6754	.2126
3 rd -person perception re knowledge (3PK)	differences in scores between perceived effects on knowledge of others and themselves (TPP in knowledge) 新聞報道對他人及自己了解影響的差異 (第三人效果)	-.75	.63	.0026	.1623	-1	1	.13	.81	.5013	.0812
Others-knowledge (OKno)	perceived effects on knowledge of others towards social events and government policies 新聞報導對他人了解(社會事件/政府政策)的影響	1	5	3.7921	.8193	1	5	0	1	.6980	.2048
Self-knowledge (SKno)	perceived effects on knowledge of themselves towards social events and government policies 新聞報道對自己了解(社會事件/政府政策)的影響	1	5	3.7820	.8269	1	5	0	1	.6955	.2067

Table 3 Measuring Third-Person Perception About Attitude and Knowledge (N= 672)	No Effect (p _s =.00) ^a	Weak Effect (p _s =.25)	Somewhat Strong Effect (p _s =.50)	Strong Effect (p _s =.75)	Very Strong Effect (p _s =1.00)	Total ^c
Other-Attitude (OAtt) (Cronbach alpha = .799)	Q.I.2 ^b : How strongly does the news affect the following traits of the audience?					
I.2.2. ^b attitude re social events	0.6	9.2	26.6	44.0	19.3	99.9
I.2.4. attitude re government policies	1.0	6.5	26.8	42.1	23.4	99.9
Self-Attitude (SAtt) (Cronbach alpha = .771)	Q.I.1: How strongly does the news affect the following traits of yours?					
I.1.2. attitude re social events	1.8	8.3	29.6	42.3	18.0	100.0
I.1.4 attitude re government policies	2.4	6.7	28.0	40.3	22.5	99.9
Other-Knowledge (OKno) (Cronbach alpha = .744)	Q.I.2: How strongly does the news report affect the following traits of the audience?					
I.2.1 knowledge of social events	1.3	7.3	23.8	46.1	21.3	99.9
I.2.3 knowledge of government policies	0.6	7.0	28.9	39.1	24.3	99.9
Self-Knowledge (SKno) (Cronbach alpha = .783)	Q.I.1: How strongly does the news report affect the following traits of yours?					
I.1.1 knowledge of social events	1.3	7.1	25.3	45.5	20.7	100.0
I.1.3 knowledge of government policies	0.9	6.7	29.5	38.1	24.9	100.0
Main cells are percentage occurrences. ^a : p _s : percentage scores on 0-1 percentage scale ^b : Question ID indicates the question's position in questionnaire. ^c : Total may not add up to 100% due to missing cases and/or rounding errors.						

<p>Table 4 Third-Person Perception About Attitude & Knowledge</p>	<p>A Other (O) (0~1)</p>	<p>B Self (S) (0~1)</p>	<p>C^{a,b} TPP:3rd-person perception (T) (T=O-S) (-1~1)</p>	<p>D^{a,b} TPP on 0-1 scale (T₀₁=(T+1)/2) (1~0)</p>
<p>1.Attitude (A)</p>	<p>.6907***</p>	<p>.6754***</p>	<p>.0153*</p>	<p>.5076*</p>
<p>2.Knowledge (K)</p>	<p>.6980***</p>	<p>.6955***</p>	<p>.0025</p>	<p>.5013</p>
<p>3^a.Attitude-Knowledge Gap (G) (G=A-K) (-1~1)</p>	<p>-.0073</p>	<p>-.0201***</p>	<p>.0128*</p>	
<p>4.AKG on 0-1 scale (G₀₁=(G+1)/2) (0~1)</p>	<p>.4964</p>	<p>.4900***</p>		<p>.5032*</p>
<p>*: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$. Main cells are variable means. Cell A1, for example, indicates that the mean of Other-Attitude (EOA) is .6907 on 0-1 scale, which is different from zero at $p < 0.001$. ^a In Columns C & D and Row 3 are results of paired-sample t tests. ^b TPP, traditionally defined as $T=O-S$, is on -1~1 directional percentage scale (p_d), where $T=0$ means no TPP, $T>0$ means TPP, and $T<0$ means reverse TPP. In contrast, T_{01} is on 0~1 percentage scale (p_s), where $T_{01}=0.5$ means no TPP, $T_{01}>0.5$ means TPP, and $T_{01}<0.5$ means reverse TPP.</p>				

Table 5 First-Person Factors Influencing the Perceived Media Effects on Self and Others						
Dependent Variable	Attitude			Knowledge		
	A. EOA	B. LSA	C. 3PA	D. EOK	E. LSK	F. 3PK
Control Block^a						
1. gender (female)	-.033 (-.081)*	.044 (.103)**	.005 (.028)	-.015 (-.037)	.043 (.105)**	.014 (.087)*
2. age	-.093 (-.036)	-.160 (-.060)	.034 (.029)	.047 (.018)	-.119 (-.045)	.083 (.081)
3. marriage (married)	-.020 (-.048)	-.032 (-.074)	.006 (.032)	-.021 (-.051)	-.034 (-.081)*	.007 (.040)
4. education	-.087 (-.051)	-.074 (-.042)	-.007 (-.009)	-.100 (-.059)	.010 (.006)	-.055 (-.082)
5. journalism major	-.035 (-.086)	-.035 (-.083)	-.000 (-.000)	-.027 (-.066)	.028 (.067)	.001 (.003)
6. journalism course	.046 (.087)*	-.027 (-.049)	.010 (.041)	.044 (.085)*	-.034 (-.065)	.005 (.024)
7. Salary	.031 (.029)	.045 (.041)	.380 (.079)	.026 (.025)	.016 (.015)	.021 (.051)
8. journalism experience	.074 (.052)	-.081 (-.055)	-.003 (-.005)	.047 (.034)	.146 (.101)	-.049 (-.088)
1st-Person Factor (Ind.)^b						
10. Beijing vs Hunan (MDE)	-.051 (-.119)*	.035 (.079)	-.008 (-.041)	-.063 (-.146)**	.022 (.050)	-.020 (-.119)*
11. Party ID (PID)	-.006 (-.016)	-.028 (-.066)	-.017 (-.094)*	.018 (.044)	-.036 (-.087)*	-.009 (-.056)
12. Perceived News Qlty. (PNQ)	.209 (.182)***	-.343 (-.289)***	-.067 (-.130)**	.272 (.239)***	.310 (-.268)***	-.019 (-.042)
1st-Person Factors ^c						
13. Beijing vs Hunan (MDE)	-.032 (-.075)	.004 (.010)	-.014 (-.071)	-.039 (-.092)*	-.006 (-.013)	-.023 (-.133)**
14. Political identity (PID)	-.015 (-.036)	-.012 (-.028)	-.013 (-.072)	.007 (.018)	-.021 (-.051)	-.007 (-.043)
15. Perceived News Qlty. (PNQ)	.196 (.171)***	-.337 (-.284)***	-.070 (-.136)**	.249 (.219)***	-.306 (-.265)***	-.028 (-.063)
16. Total r ² of control block	.060***	.106***	.036*	.079***	.095***	.033*
17. Inc. r ² due to FPF block	.035*	.079*	.025**	.057*	.067*	.015*
<p>*: p<0.05; **: p<0.01; ***: p<0.001.</p> <p>^a The following eight rows are percentage coefficients (<i>b_p</i>) and standardized betas (in parentheses) when the eight control variables are entered as a block.</p> <p>^b The following three rows are percentage coefficients (<i>b_p</i>) and standardized betas when each of the three variables is added separately and alternatively on top of the eight control variables.</p> <p>^c The following three rows are percentage coefficients (<i>b_p</i>) and standardized betas when all three variables are added simultaneously as one block on top of the eight control variables.</p>						

Table 6

<p>A1 Attitude Model 1 (Process)</p>	<p>K1 Knowledge Model 1 (Process)</p>								
<p>A2 Attitude Model 2 (Simplified Process)</p>	<p>K2 Knowledge Model 2 (Simplified Process)</p>								
<p>A3 Attitude Models 3 (outcome effect)</p> <p>PNQ → 3PA (-0.067**)</p> <p>PID → 3PA (-0.017*)</p> <p>MDE → 3PA (-0.008)</p>	<p>K3 Knowledge Models 3 (outcome effect)</p> <p>PNQ → 3PK (-0.019)</p> <p>PID → 3PK (-0.009)</p> <p>MDE → 3PK (-0.020*)</p>								
<p>A4 Outcome TPP about Attitude</p>					<p>K4 Outcome TPP about Knowledge</p>				
<i>OAtt</i>	<i>SAtt</i>	<i>3PrA</i>	<i>3PA</i>	<i>3PA_d</i>	<i>OKno</i>	<i>SKno</i>	<i>3PrK</i>	<i>3PK</i>	<i>3PK_d</i>
.691***	.675***	.015*	.508*	.008*	.698***	.696***	.003	.501	.001
<p><i>MDE</i>: Media Environment – Political (1) or entertainment (0) orientation <i>PID</i>: Political identity – Chinese Communist Party member (1) or not (0) <i>PNQ</i>: Perceived news quality <i>OAtt</i>: Perceived effect on others’ attitude, on 0~1 scale <i>SAtt</i>: Perceived effect on self’s attitude, on 0~1 scale <i>3PrA</i>: TPP regarding attitude, on -1~1 raw scale: $3PrA = OAtt - SAtt$ <i>3PA</i>: TPP regarding attitude, on 0-1 percentage scale (ps): $3PA = (3PrA + 1) / 2$ <i>3PA_d</i>: TPP regarding attitude, on -.5~.5 scale: $3PA_d = 3PA - .5 = 3PrA / 2$</p> <p><i>OKno</i>: Perceived effect on others’ knowledge, on 0~1 scale <i>SKno</i>: Perceived effect on self’s attitude, on 0~1 scale <i>SPrK</i>: TPP regarding knowledge, on -1~1 raw scale: $3PrK = OKno - SKno$ <i>3PK</i>: TPP regarding knowledge, on 0-1 percentage scale (ps): $3PK = (3PrK + 1) / 2$ <i>3PK_d</i>: TPP regarding knowledge, on -.5~.5 scale: $3PK_d = 3PK - .5 = 3PrK / 2$</p> <p><i>EOA</i>: Perceived effect on others regarding attitude <i>LSA</i>: Perceived lack of effect on self regarding attitude <i>EOK</i>: Perceived effect on others regarding knowledge <i>LSK</i>: Perceived lack of effect on self regarding knowledge</p>									

Technical Notes on

First-Person Influences on Third-Person Perceptions

This document accompanies the manuscript titled “First-person influences on third-person perceptions,” which is under journal review.

The document covers information that may be too technical or too detailed to warrant print space but should be available to reviewers, editors, and future readers. Upon publication of the study we will make the document as a supplemental file of the printed article.

I. Roles of P Values in This Study

This study follows the tradition of calculating and reporting p values. The authors, however, are aware of the debates across disciplines over the misuses and abuses of p values and hypothesis testing (Amrhein et al., 2019; Batanero, 2000; Carver, 1978; Colquhoun, 2014; Lazar, 2019; McShane et al., 2019; Mulaik et al., 1997; Nix and Barnette, 1998; Nuzzo, 2014; Robinson and Levin, 1997; Shafer, 2019; Wasserstein and Lazar, 2016; Wasserstein et al., 2019; Wilkinson & Force, 1999).

This manuscript adopts some practices recommended by increasingly more statisticians and journal editors, including:

- 1) We use $p < 0.05$ mainly as the threshold for prescreen before interpreting the size of an effect. More emphasis is on effect sizes than p values.
- 2) We use $p < 0.05$, where necessary and appropriate, to help partition effect patterns, e.g., differentiating competitive mediation from complementary mediation. More emphasis is on effect patterns than p values.
- 3) We strive to avoid the term “significance,” including “statistical significance,” and its derivatives, to avoid mistaking $p < 0.05$ as implying theoretical or practical significance. We look forward to the assessments of editors and reviewers as to whether we succeeded in avoiding the misleading term without hampering communication.

II. Percentage Coefficient (b_p)

Given that a main function of p value is to prescreen a relation before measuring effect size, proper application of p depends on proper measures of effect size. Here we explain the effect size measures used in this study.

II.1. Effect is a Multifaceted Concept Measured by Multiple Indicators

Effect size has always been a central concern within the social sciences and across disciplines (Cohen et al., 1983; Wilkinson & Force, 1999; Zhao & Zhang, 2014). As third-person perception (TPP) is, by definition, a comparison between two perceived effect sizes—on others and on self—a proper effect size measure is especially important for TPP studies. This study is further tasked to measure and compare two mediated effects.

Effect is not a monolithic concept. It is multifaceted. P value measures one facet of effect, regarding the general confidence we may place in the repeatability, aka reliability, of the direction of the effect that has been observed. Arguably, it is a rather peripheral facet of the effect concept. P value and confidence interval were not designed to an effect size indicator (Batanero, 2000; Morey et al., 2016).

This study also reports other statistical indicators, including standardized beta (β) and r squared (r^2). Each of these has its own limitations. Correlation coefficient r and the related r^2 measure predictive power in terms of variance explained but, for the purposes of this study, not effect size exactly. More importantly for TPP studies, r or r^2 is unavailable for each individual independent variable in multiple regression, which TPP studies—including this one—often rely on (Cohen et al., 1983; Wilkinson & Force, 1999; Zhao & Zhang, 2014).

While standardized beta (β) measures efficiency, it uses standard deviation (sd) as the scale unit. Standard deviation has a purely statistical meaning, but lacks consistent conceptual, theoretical, or practical meaning, which makes β overly difficult to interpret. The lack of prima facie cross-variable equitability of sd limits β 's function and usefulness in cross-variable comparison (Wilkinson & Task_Force, 1999; Zhao & Zhang, 2014). As a result, TPP studies rarely interpret β coefficients or use β for effect size comparison even when they report β .

This study will also report regression coefficients (b), which are interpretable when the units of independent and dependent scales are both meaningful. But b coefficients are uninterpretable when the units are not meaningful, which is the case with Likert scales that TPP studies regularly employ (Davison, 1983a; Perloff, 1993a, 1999). Coefficients b are also not comparable when the variables under comparison don't have equitable units (Zhao & Zhang, 2014).

II.2. Theory and Technique of Percentage Coefficient (b_p) on Percentage Scale (p_s)

This study adopts *percentage coefficient* (b_p or $b\%$), which is a regression coefficient (b) when both the independent and the dependent variables are on 0-1 scales, aka *percentage scales* (p_s), where 0 represents the conceptual minimum and 1 represents the conceptual maximum. A 0, 1 scale, aka dummy scale, is a special case of 0-1 scales (p_s). Variables on other scales are transformed to the 0-1 scale using a formula (Eq.1) shared with min-max normalization, a feature scaling technique that computer scientists and statisticians often use for data mining or machine learning (Ding et al., 2001; Jain et al., 2005, 2014; Jiang et al., 2021; Patro & Sahu, 2015; Zhao, 1997; Zhao et al., 1994, 2010; Zhao & Zhang, 2014):

$$s_p = \frac{s_o - \min}{\max - \min} \quad \text{Eq. 3}$$

Here s_o represents score on original scale, s_p represents score on 0-1 percentage scale, and \min and \max are the conceptual minimum and conceptual maximum of the original scale, respectively.

Regardless of the original scale or unit, percentage coefficient b_p is interpretable. It represents the percentage-point change in the dependent variable associated with a wholesale increase in the independent variable from the conceptual minimum to the conceptual maximum. Percentage coefficients b_p are also comparable across dependent variables, independent variables, or both. The last feature may be particularly useful for third-person effect studies and OSPO analysis, as this study demonstrates.

III. Other-Self Process and Outcome (OSPO) Analysis

III.1. Other-Self Process and Outcome

TPP is defined as a differential between two perceptions, namely the perceived effect on others, O, and perceived effect on self, S (Davison, 1983; Perloff, 1999), leading to the standard operationalization, $TPP = O - S$ (Perloff, 1993b, 1999).

Since Davison (1983) introduced the concept of third-person perception (TPP), studies have identified factors that may affect TPP (Paul et al., 2000; Perloff, 1993b, 1999). TPP becomes stronger when the media content appears socially undesirable or potentially harmful, including rap music (McLeod et al., 1997), pornography (Lo & Wei, 2002), scandals (Driscoll & Salwen, 1997), or media violence (Duck & Mullin, 1995).

It follows that vagueness or perceived distance of the others should magnify TPP. Indeed, TPP becomes more amplified as the definition of others becomes broader (Cohen et al., 1988), fuzzier (Duck & Mullin, 1995), or the social distance becomes larger (Gunther, 1991), while proximity of self to others appears to have an opposite effect (Duck & Mullin, 1995).

Given the defining effects of O and S on TPP, one might expect thorough and detailed investigations into 1) the process of O and S affecting TPP as the outcome and 2) the process of other factors affecting TPP through O and S. Instead, TPP researchers fret about insufficient understanding of the process that leads to TPP, and insufficient tools that help researchers to ascertain the process-outcome relationship transparently and precisely (Mason, 1995; Paul et al., 2000).

The growing understanding of mediation models may help to develop such tools. The expectedly strong effects of O and S on TPP make O and S strong candidates to mediate the effect of FPF on TPP (Baron & Kenny, 1986; Hayes, 2009, 2012; MacKinnon et al., 2002; MacKinnon & Fairchild, 2009; Rucker et al., 2011; Zhao et al., 2010).

As FPF should affect TPP through O and S, the four variables appear *prima facie* to form a two-mediator model, which may help to ascertain and analyze TPP Process and Outcome, which would allow

TPP researchers to tap into the wealth of collective knowledge about mediation in general (Hayes, 2009, 2012; Preacher & Hayes, 2008).

Accordingly, this study adopts and adapts mediation models for analyzing the other-self processes and outcomes. Nevertheless, direct adoption is unavailable due to the special relation of $FPF \rightarrow S \& O \rightarrow TPP$, as shown in the next section. Adaptation is necessary, which is also discussed in the next section.

III.2. Mediation Analysis of Other-Self Process and Outcome (OSPO)

Other-Self Process and Outcome (OSPO) analysis starts with one mathematical definition, Equation 2, followed by five regression equations, Equations 3 through 7, which are also graphed in Figure 1.

$$T_P = (O - S + m_x) / 2 \quad \text{Eq. 4}$$

$$O = i_1 + a_o X + e_1 \quad \text{Eq. 5}$$

$$T_P = i_2 + b_o O + d_o X + e_2 \quad \text{Eq. 6}$$

$$S = i_3 + a_s X + e_3 \quad \text{Eq. 7}$$

$$T_P = i_4 + b_s S + d_s X + e_4 \quad \text{Eq. 8}$$

$$T_P = i_5 + c X + e_5 \quad \text{Eq. 9}$$

O: Perceived degree to which the others are affected.

S: Perceived degree to which the self is affected.

T_P: Third-person perception, aka, third-person effect, on 0-1 scale.

X: A first-person factor that may affect the other-self Process and Outcome.

m_x: The scale maximum of variable *S* and *O*, assuming they are on a same scale. This study placed all variables on 0-1 percentage scales (*p_s*), therefore *m_x*=1.

Figure 1 About Here

So that *a_o* and *a_s* can be interpreted similarly and compared with each other, *O* and *S* need to be on a same scale. Subtracting *m_x* and dividing by 2 in Equation 2 is to further place *T_P* on the same scale as *O* and *S*, so that *a_o*, *a_s*, *b_o*, *b_s*, and *c* can all be interpreted similarly and compared with each other.

Note that Equations 3 through 7 represent two traditional mediation models, $X \rightarrow O \rightarrow T_P$ and $X \rightarrow S \rightarrow T_P$ (Baron & Kenny, 1986; Hayes, 2009, 2012, 2013; MacKinnon et al., 2002; MacKinnon &

Fairchild, 2009; Preacher & Hayes, 2008; Rucker et al., 2011; Zhao et al., 2010; Zhao & Zhang, 2014). The O-S-T relationship, mathematically defined by Equation 2, combines the two otherwise separate models into one. The fact that Equation 2 is set up in accordance with a principal theme of TPP, that third-person perception is the difference between the perceived effect on others and the perceived effect on self, makes OSPO models useful tools for describing and analyzing third-person effects.

That they are mediation models implies that c in Equation 7 represents the combined effects, aka total effects, of X on T_P , as shown in Equation 8 below (Baron & Kenny, 1986; Hayes, 2009, 2012, 2013; MacKinnon et al., 2002; MacKinnon & Fairchild, 2009; Preacher & Hayes, 2008; Rucker et al., 2011; Zhao et al., 2010; Zhao & Zhang, 2014):

$$c = a_o * b_o + d_o = a_s * b_s + d_s \quad \text{Eq. 10}$$

which implies

$$d_o = a_s * b_s + d_s - a_o * b_o \quad \text{Eq. 11}$$

$$d_s = a_o * b_o + d_o - a_s * b_s \quad \text{Eq. 12}$$

$$d_o = c - a_o * b_o \quad \text{Eq. 13}$$

$$d_s = c - a_s * b_s \quad \text{Eq. 14}$$

Inserting Equations 3 and 5 into Equation 2 and rearranging, we have

$$T_P = \frac{i_1 - i_3 + m_x}{2} + \frac{a_o - a_s}{2} x + \quad \text{Eq. 15}$$

Comparing Equations 13 with Equation 7, we have

$$i_5 = \frac{i_1 - i_3 + m_x}{2} \quad \text{Eq. 16}$$

$$c = \frac{a_o - a_s}{2} \quad \text{Eq. 17}$$

Equation 15 constitutes a mathematical proof for an intuition held by TPP researchers, which states that a factor—any factor—affects the third-person perception (c) by and only by affecting the perceived effect on others (a_o) and the perceived effect on self (a_s). The proof gives us the confidence to interpret some of the key parameters as we did in the manuscript.

To understand the concept of “direct effect” in OSPO models, we define d with Equation 16:

$$d = d_o - a_s * b_s \quad \text{Eq. 18}$$

Inserting Eq. 9 into Eq. 16 and rearranging, we have

$$d = d_s - a_o * b_o \quad \text{Eq. 19}$$

Inserting Eq. 12 into 17 and rearranging, we have

$$c = a_o * b_o + a_s * b_s + d \quad \text{Eq. 20}$$

Eq. 18 is another key equation. It shows that $X \rightarrow T_P$ total effect (c), where T_P represents TPP, may be decomposed into three components:

- 1) $a_o * b_o$, the effect of X on T_P mediated through O , the perceived effect on others,
- 2) $a_s * b_s$, the effect of X on T_P mediated through S , the perceived effect on self,
- 3) d , the residual value in T_P unexplained by $a_o * b_o$ and $a_s * b_s$, the mediation.

d Represents residuals unaccounted for by the mediation of O and S , which resembles the direct effect representing the residual effects unaccounted for by the mediation of M in a typical $X \rightarrow M \rightarrow Y$ mediation model. Based on this similarity we denote the OSPO residual d and sometimes graph it as a direct path from FPF to T_P .

There is, however, a major difference. The direct effect in typical mediation represents all residual effects of X unexplained by the mediator(s) already identified in the model, which include all such effects mediated through mediators not identified in the model. In an OSPO model, however, all effects of X are, by definition, mediated by O or S , according to Eq. 2 and Eq. 15. There cannot be any X effects unexplained by O or S .

A technical detail may be worth noting. Eq. 2 and Eq. 15 do not include error terms (e) like regression Equations 3 through 7 do. That is because the two equations are mathematical definitions, not regression equations. The error terms represent the effects unexplained by the independent variables in the models. Eq. 2 and Eq. 15 do not contain unexplained effects.

Therefore, there cannot be any residual $FPF \rightarrow T_P$ effects not through O or S . While d represents residual values in T , it does not represent residual effects of FPF on T_P . In an OSPO model d plays a role similar to the role that a (*constant* aka *intercept*) plays in a regression model $y = a + bx + e$. Parameter d is a necessary correction term to include for predicting T_P values of individual cases, just like constant a is a necessary correction term to include for predicting y values of individual cases. However, d is unnecessary for assessing FPF effects on T , just like constant a is unnecessary for assessing X effect on Y or M .

When graphing an $FPF \rightarrow O \& S \rightarrow T_P$ model as one OSPO model, we did not include a direct $FPF \rightarrow T_P$ path, as Table 6 of the manuscript does. This is done for the same reason that mediation analysts usually do not graph the constant (intercept) a in a mediation graph.

However, when we graph $FPF \rightarrow O \rightarrow T_P$ and $FPF \rightarrow S \rightarrow T_P$ as two separate models, we graph d_o and d_s , and depict each as the direct effect within the respective model, as Figure 1 and Figure 2 of this Technical Notes do.

III.3. Functions of Percentage Coefficients (b_p) and OSPO analysis

Percentage coefficients (b_p) helped this study to accomplish the following:

1. To measure and interpret effect sizes in regression analysis;
2. To compare effect sizes across independent variables, dependent variables, or both in regression analysis;
3. To interpret and compare effect sizes between all paths in OSPO models, making OSPO analysis possible;
4. To probe how FPF affects TPP;
5. To probe how an $FPF \rightarrow TPP$ effect disappears;
6. To probe how a third-person perception appears;
7. To probe how a third-person perception disappears.

For example, using OSPO analysis equipped with p_b on p_s , this study discovered the following:

- a. $PNQ \rightarrow 3PA_P$ effect is far stronger the effect of any of the other five $FPF \rightarrow TPP$ effects examined in this study (Points 1 and 2 above);
- b. PNQ affects $3PA_P$ by exerting a much stronger effect on SAT than on OAT , even though the latter is very strong itself (Point 4 above);
- c. PID affects $3PA_P$ because of the cooperation (complement) between the two component effects, even though one is very weak and the other is moderate at best, and both fail the statistical prescreen ($p > 0.05$) (Point 4 above);
- d. The $PNQ \rightarrow 3PK_P$ effect disappears because of the fierce competition between two very strong

- component effects (Point 5 above);
- e. TPP came into being at the present level regarding attitude in part because perceived news quality (PNQ) is at the observed level; TPP likely would go up or come down significantly if PNQ would come down or go up moderately (Point 6 above);
 - f. TPP is near zero regarding knowledge, in part, because of the offsetting effects of competing tendencies regarding TPP, namely the TPP tendencies of Hunan journalists and those dissatisfied with the news, and the reverse TPP tendencies of Beijing journalists and the satisfied (Point 7 above).

III.4. OSPO Tools

OSPO procedure provide additional tools. Figure 2 rearranges some of the findings from this dataset, to serve as examples illustrating the tools' applications.

Figure 2 about here

Other-Self Comparison. The other-self comparison, mainly between a_o and a_s , was a key to understanding a model of third-person effect. Through this prism, Figure 2 reveals varied process-outcome relations. Sometimes FPF affected O (a_o) and S (a_s) in a same direction with approximately equal efficiencies; the competing effects of similar sizes offset each other to produce a near-zero outcome (total) effect on TPP. This study uncovered three such scenarios, A1, B2, and B3 of Figure 2.

Sometimes FPF affected O and S in the same direction with very different effect sizes; the differential effect was strong enough to produce an outcome effect on TPP. This study found two such cases, B1 and A3.

Sometime FPF affected O and S in opposite directions; the differential effect was strong enough to produce an outcome effect on TPP even though one or both component effects were close to zero, as in Model A2.

Mediation-Total Comparison. Comparing the mediated effects (a_o*b_o and a_s*b_s) with the total effect (c) of each of the six models in Figure 2, one might see that a process effect could be strong even

when the outcome effect was small or near zero. Model B3 was one example, in which each mediated effect, $a_o * b_o = 0.044$ ($p < 0.001$) or $a_s * b_s = -0.052$ ($p < 0.001$), was more than twice as strong as the total effect, $c = -0.019$ ($p > 0.05$).

Cross-Leg Comparison. The mathematical links between O, S, and TPP dictated strong second-leg effects of all OSPO models, which was shown in Figure 2, where the weakest second-leg path showed $|b_p| = 0.148$ (B1), and all 12 second-leg paths showed $p < 0.001$. The mathematically guaranteed strengths make b_o and b_s stringent benchmarks for assessing first-leg effects.

Take Models A3 and B3 for examples: Of the four first-leg b_p coefficients, each showed a larger absolute value than its second-leg counterpart, i.e., $|a_o| > |b_o|$ and $|a_s| > |b_s|$, which indicated exceedingly strong associations between perceived news quality and perceived affectabilities.

Triad Comparison. Triad refers to three key coefficients, c , the combined effect or total effect, aka outcome effect, and a_o and a_s , the two first-leg effects and the most important process effects. We conducted the comparison through the following steps:

- 1) Examined the outcome effect c . Used its p value to classify each model into one of two categories:
 - a) apparent-effect model, i.e., sufficient evidence for FPF \rightarrow TPP total effect;
 - b) minimal-effect model, i.e., insufficient evidence for FPF \rightarrow TPP total effect.
- 2) Examined each apparent-effect model. Examined and compared its a_o and a_s to probe why and how the effect came about.
- 3) Compared across apparent-effect models to detect possible pattern(s) of the triad relations, i.e., the relations between c , a_o , and a_s .
- 4) Examined each minimal-effect model. Examined and compared its a_o and a_s to probe why and how the effect is small or obscure.
- 5) Compared across minimal-effect models to detect possible pattern(s) of the triad relations, i.e., the relations between c , a_o , and a_s .

Following these steps to reanalyze Figure 2, we see three apparent-effect models, B1, A2, and A3, each through a different process. B1 was a weak competition and a mono-effect model—location affected perceived effect on others but not necessarily self. Beijing respondents exhibited weaker TPP mainly because they perceived lower affectability of general others, while their perceptions of their own affectabilities were not that different from their Hunan counterparts.

A2 was a weak complement and a minimal-effect model, as both a_o and a_s failed the statistical threshold ($p > 0.05$). Party members showed weaker TPP mainly because they were somewhat more likely than non-members to think of their own attitude being affected ($a_s = 0.028, p > 0.05$). The effect of Party membership on perceived affectability of others was tiny, albeit in the direction favoring a negative outcome effect ($a_o = -0.006, p > 0.05$). Although the component effect was tiny, it was enough to strengthen the outcome effect and lower its p value to pass the threshold ($c = -0.017, p < 0.05$).

A3 showed a strong competition. The effect on *OAT* ($a_o = 0.209, p < .001$) and *SAT* ($a_s = 0.343, p < 0.001$) were both strong. But a_s pushed for a negative outcome effect and a_o did the opposite. As a_s was much stronger, it overcame a_o to produce a negative and quite strong *PNQ* outcome effect ($c = -0.067, p < 0.01$). Hence, $PNQ \rightarrow 3PA_P$ was negative and strong, mainly because of the huge effect through *SAT* that overcame the competing effect through *OAT*.

In other words, the more satisfied rated their own affectability much more highly than the less satisfied. The former group also rated others' affectability higher than the latter group. While both effects were strong, the former was much stronger, leading to a negative and quite strong outcome effect of perceived news quality on TPP regarding attitude.

Following the steps of triad comparison, we also identified three minimal-effect models, A1, B2, and B3, which were defined by c coefficients that failed the statistical threshold test ($p \geq 0.05$). A pattern emerged—for each of the three models, it was a competition between a_o and a_s that pushed down the outcome effect, making it fail the threshold. This pattern could be important if sufficiently replicated. It suggested that a small and statistically unacknowledged correlation ($p \geq 0.05$) between FPF and TPP may not necessarily indicate minimal process effect. It could indicate strong competitions in the process.

Process-outcome Comparison. A main mission of OSPO analysis was to better understand third-person perception (TPP), the grant outcome of the other-self process. The last rows of Figure 2 provided mean statistics of three pairs of TPP indicators discussed below.

3PA and 3PK. These were raw scores of TPP on -1~1 scale, on which 0 was the dividing point between TPP (if over 0) and reverse TPP (if under 0), pending statistical test $p < 0.05$. $3PA = OAT - SAT$ and $3PK = OKN - SKN$.

3PA_p and 3PK_p. These two converted the raw scores to 0-1 percentage scale, with 0.5 as the dividing point between TPP and reverse TPP. $3PA_p = (3PA + 1)/2$ and $3PK_p = (3PK + 1)/2$. Their main function was to represent TPP in regression analysis.

3PA_d and 3PK_d. These two indicators measured third-person perception on percentage scale by calculating the difference between TPP on percentage scale ($3PA_p$ or $3PK_p$) and the dividing point, 0.5. Therefore $3PA_d = 3PA_p - 0.5 = 3PA/2$ and $3PK_d = 3PK_p - 0.5 = 3PK/2$. $3PA_d$ and $3PK_d$ were -.5~.5 scale with 0 as the dividing point between TPP and reverse TPP.

A main function of $3PA_d$ and $3PK_d$ was comparison with the corresponding c , representing FPF → TPP total effect. In A3, for example, $c = -0.067$ compared with $3PA_d = 0.008$ suggested that the maximum PNQ effect was more than eight times the average TPP ($c/3PA_d = -0.067/0.008 = -8.375$), indicating a very large effect of perceived news quality. The Technical Notes provide more details for this comparison.

Comprehensive Comparisons. To probe why and how third-person effect appears or disappears in the process of other-self interactions, it may be helpful to integrate several comparisons, i.e., to conduct comprehensive comparisons. Here is one example:

While $3PK = .003$ ($p > 0.05$, Figure 2) signaled the disappearance of TPP regarding knowledge, a process-outcome comparison with $c = -0.02$ ($p < .05$) for $MDE \rightarrow 3PK_p$ (Figure 2, B1) suggested that the disappearance was due, in part, to the Beijingers' reverse TPP tendency almost completely offsetting Hunanese' TPP tendency. A triad comparison indicated that the Beijingers' said tendency was due mainly to

the Beijingers' weaker inclination to think of others' knowledge being affected ($a_o = -0.063$, $p < 0.01$, compared to $c = -0.02$, $p < 0.05$ and $a_s = -0.022$, $p > 0.05$, Figure 2, B1).

FPF Comparison. The procedure discussed above, including Figure 2, assumes one FPF variable for each OSPO model. A natural extension of the procedure is to consider multiple FPF variables and to consider the possible causal relations between them, which this study does.

As preliminary step, we first entered the three first-person factors as a block to measure their overall contributions (Lines 14-15, Table 5 of the manuscript). The contributions were sizable. The incremental r^2 ranged from 0.015 ($p < 0.05$) to 0.079 ($p < 0.05$), which meant 45.45% (F17 vs. F16) to 74.53% (B17 vs. B16) additional predictive powers were added to the control block.

In three occasions, location or Party membership passed statistical threshold ($p < .05$) when entered separately; but it reduced its effect size and raised its p over par when entered as a block (Cells A10 vs. A13, C11 vs. C14, and E11 vs. E14). The phenomena suggested structural causal relations that started with $MDE \rightarrow PNQ$ and $PID \rightarrow PNQ$ and ended with $PNQ \rightarrow O \rightarrow TPP$ and $PNQ \rightarrow S \rightarrow TPP$. Under this model, the reductions in effect sizes were the results of blocking the indirect effects through PNQ ; p values rising over par when controlling PNQ suggested absence of direct effects. The much larger effect sizes of PNQ than MDE and PID on O , S , and TPP added support to this view—mediator PNQ had larger effects because it was closer to the dependent variables in the effect chains.

It was based these findings that we built the $MDE \& PID \rightarrow PNQ \rightarrow O \& S \rightarrow TPP$ model, as shown in Table 6 of the manuscript, for further analysis. A future study may experiment with applying structural equation modeling (SEM) to such relationship, after adopting the technique of separating O and S described above (III.2) of this Technical Note.

IV. Other-Self Desirability & Undesirability (OSDU) Analysis

IV.1. Second-Level Differential

Given that TTP is an other-self differential, the difference between the two TPPs (0.0127, $p < .05$, Table 7, Cell H4) represents a second-level differential. We found it intriguing: What does it tell us about the respondents' psychology? What are the underlying causes or sources?

The upper right corner of Table 7 lists four first-level differential perceptions as potential sources.

S1: Others acquired attitude more than self. ($u_{os}=0.0153$, $p<.05$, Cell H2, i.e., classic TPP re attitude).

S2: Others acquired knowledge more than self ($d_{os}=0.0025$, $p>.05$; TPP re knowledge; Cell H3. The inverse of d_{os} , $-d_{os}$, contributes positively to d_2).

S3: Others acquired attitude more than knowledge ($o_{ud}=-0.0073$, $p>.05$, Cell F4).

S4: Self acquired attitude more than knowledge ($s_{ud}=-0.0201$, $p<.001$, Cell G4. The inverse of s_{ud} , $-s_{ud}$, “Self does the desirables more than the undesirables,” contributes positively to d_2).

Note that the negative s_{ud} (S4) and the statistically acknowledged p value evidence the opposite of the statement, i.e., the perception that oneself acquired knowledge more than changed attitude.

Of the four, the second-level differential came mostly from the inverse of the statement S4, followed by S1. Recall the starting assumption that knowledge gain is more desirable than attitude change. Note the pattern that each of the three above-threshold ($p<.05$) findings, namely S1 (TPP re attitude), inverse of S4, and the second-level differential (d_2), is in the direction of “I do good, but they do less good.”

Mathematically, d_2 is not just the difference at the right margin of the 2×2 table ($u_{os} - d_{os}=0.0153-0.0025=0.0128$), but also the difference at the lower margin [$o_{ud}-s_{ud} = (-0.0073)-(-0.0201)=0.0128$]. Thus, d_2 behave similarly to grand total or grand mean of a 2×2 table. Each of the three is a comprehensive figure summarizes an aspect of the table. To fully understand this differential, we may examine its four elemental perceptions –

S5: 0.6907 -- *Others do the undesirables.* (o_u , Cell F2)

S6: 0.6754 – *Self does the undesirables.* (s_u , Cell G2. The opposite of o_u , indicating “self doesn’t do undesirables,” $\neg o_u$, contributes positively to d_2 .)

S7: 0.6980 – *Others do the desirables.* (o_d , Cell F3. The opposite of o_d , indicating “others don’t do desirables,” $\neg o_d$, contributes positively to d_2 .)

S8: 0.6954 – *Self does the desirables.* (s_d , Cell G3)

Note that s_u (0.6754) stood below the average of the four (0.6899, $p < .001$ for the deviation), below each of the other three elemental perceptions (o_u, o_d, s_d), and s_u 's deviation from the mean was much larger than any of the other three. Note also that lower s_u contributes to higher auto superiority. Thus, the perception of *I-don't-do-bad* (opposite of s_u) appears to have contributed more than any other elemental perceptions (o_u, o_d, s_d) to the second-level differential. We might refer to this phenomenon *auto-non-inferiority*, as supposed to *auto-superiority*, *hetero-non-superiority*, and *hetero-inferiority*.

In other words, the respondents' perceptions about themselves contributed more than their perceptions about the general others; and their denying the socially undesirable behaviors contributed more than their declaring the socially desirable behaviors. Future studies may investigate whether the phenomenon of auto-non-inferiority is due to the idiosyncrasies of the time, locale, or populace of this dataset, or a part of the more general pattern.

IV.2. Other-Self Desirability and Undesirability (OSDU) Analysis

Adding the desirability dimension to the other-self dimension may broaden the analysis, and the concept of auto-superiority provide an overarching frame for a better understanding of the third-person perception and the related perceptions. We thus developed a scheme for a more systematic analysis of the differential perceptions of socially desirable and undesirable behaviors by self and others, dubbed other-self desirability-undesirability (OSDU) analysis.

Consider the four statements (S5-S8) listed above. The differential between S5 and S6 (o_u-s_u) underlies the classic third-person perception (TPP) regarding attitude, while the differential between S7 and S8 (o_d-s_d) underlies what this study refers to as TPP regarding knowledge. There are altogether four possible pairwise comparisons where either the subject (self or others) or the object (desirables or undesirables), listed above as four statements (S1-S4)

Each of the four statements represents a differential. This study found empirical support for S1 (u_{os}), the inverse of S4 ($-s_{ud}$), and the second-level differential (d_2), S1 minus S2 ($d_2 = u_{os} - d_{os} = o_{ud} - s_{ud}$). Assuming the four elemental perceptions are on 0-1 percentage scale, $-2 \leq d_2 \leq 2$.

For this survey, the statistical tests for S2 and S3 are inconclusive ($p \geq .05$). Future researchers may investigate the underlying causes. A contributing factor might be that, in this study, the questionnaire wordings measuring the perceived media effect on knowledge did not make it clear enough that acquiring knowledge from the media is socially desirable.

The index d_2 is a summary of the relationship between the four elemental perceptions and four differential perceptions. Table 7 presents one way of estimating each perception's contribution to the overarching perception, d_2 .

The estimation assumes that the general tendency of the respondents' responses is best summarized in the mean of the four elemental perceptions, which is denoted a_v and shown below the *percentage* sub-table. Deviations from a_v represent contributions, as shown in the *deviation* and *contribution* sub-tables. Larger deviations indicate larger contributions. Positive contributions indicate that the corresponding perception add to a_r , while negative contributions indicate subtracting from d_2 . *DP Contribution* sub-table reports *directional percentage contributions*, where each elemental indicator (o_{up} , s_{up} , o_{dp} , and s_{dp}) and each first-level differential indicator (u_p , d_p , o_p , or s_p) ranges between -1 and 1, where 1 indicates maximum positive contribution, -1 indicates maximum negative contribution, and 0 indicates no contribution. The percentage contribution of d_2 to d_2 (d_{2p}) is 100% by definition, $d_{2p}=1$. Therefore, d_{2p} serves as a calculation check.

The following equations are also important for understanding the relationship between the eight component perceptions (S1-S8) and the combining perception, d_2 , assuming o_u , s_u , o_d , and s_d are all on 0~1 percentage scale (p_s):

$$u_p + d_p = 0.5 \quad \text{Eq. 21}$$

$$o_p + s_p = 0.5 \quad \text{Eq. 22}$$

$$o_{up} + s_{up} + o_{dp} + s_{dp} = 0.5 \quad \text{Eq. 23}$$

Note also that d_2 ranges between -2 and 2.

Of the four differential perceptions measured in this survey, s_p contributed the most (0.7874), followed by u_p , which represents classic TPP (0.6024, bottom of the Example sub-table, Table 7). As s_p estimates the contribution of "I do the desirables more than the undesirables," it suggests that the respondents focused on themselves more than on the others.

The contribution estimators of the elemental perceptions provide details one level deeper. Of the four elemental perceptions measured in this survey, s_{up} contributed by far the most (0.5699, Cell G15) to d_2 , followed by s_{dp} (0.2175). As s_{up} estimates the contribution of “I don’t do the undesirables,” the finding not only replicates the respondents’ focus on selves, but it also suggests that they focused on denying the disrespected behavior of letting the media to influence their attitudes.

Of the four differential perceptions, the most negative contribution came from o_p (-0.2874). As o_p estimates contribution by others’ perceptions, this result suggests that the respondents were least concerned with others. Of the four elemental perceptions, only one, o_{dp} , reported a negative contribution (-0.3199), which suggests that the perception of “others doing no good” was the weakest of the four among the respondents.

V. Two More Measures of Effect Sizes, b_p over Y and its Inverse

As discussed, we compute $3PAd$ and $3PKd$ to be compared with the corresponding c coefficients, representing $FPF \rightarrow TPP$ total effects. We found that the maximum effect of PNQ on TPP regarding attitude is more than eight times the size of observed TPP ($c/3PAd = -0.067/0.008 = -8.375$).

The ratio, dubbed b_p over Y (b_{oy}), $b_{oy} = b_p/(\bar{Y}-m) = -8.375$, where \bar{Y} is the mean of dependent variable and m is the threshold marking point, and its inverse, Y over b_p (y_{ob}), $y_{ob} = (\bar{Y}-m)/b_p = -0.1194$, could be helpful in the probing how or why an observed third-person perception comes into being. The ratio $y_{ob} = -0.1194$, for example, implies that had perceived news quality (PNQ) been raised by about one eighth (0.1194) of the 0-1 scale, the observed third-person perception would have been reduced to zero under the $PNQ \rightarrow TPP$ causal assumption. Inversely, had PNQ been reduced by as much (0.1194), TPP would have doubled under the same causal assumption. In other words, the observed PNQ level is an important factor that TPP is at the observed level. Given that PNQ level is presently quite high at $p_s = 0.7704$ (Table 2 of the manuscript), we might also say TPP has a better chance rising due to the ceiling effect.

Comparison can also be made between $c = -0.017$ with $3PAd = 0.008$ (Model A2). The resulted $b_{oy} = -2.125$ would suggest a sizable effect of Party membership, which is, however, much smaller than that of perceived news quality regarding attitude.

The near zero $3PK = 0.003$ ($p > 0.05$) would indicate minimal third-person effect, according to the standard procedure of hypothesis testing. More would be revealed, however, if one compares $3PK = 0.003$ ($p > 0.05$) with $c = -.02$ ($p < 0.05$) for the $MDE \rightarrow 3PK_p$ effect. A near-zero outcome does not necessarily mean little is going on in the process. Evidently, regarding knowledge, Hunan journalists have a tendency of TPP while Beijing journalists lean toward the opposite, reverse TPP. The competing tendencies of the two groups offset each other to produce the near-zero outcome of $3PK = 0.003$ ($p > 0.05$).

Even when TPP and total-effect indicators both fail the statistical threshold test ($p \geq 0.05$), much could be happening underneath in the process. In the $PNQ \rightarrow 3PK_p$ model (B3), while p is over par for c ($c = -0.019$, $p > 0.05$), the effect size measured by b_p is almost as large as its counterpart for the $MDE \rightarrow 3PK_p$ model ($c = -0.020$, $p < 0.05$; B1). The nearly equal c values suggest that the competition between the two tendencies—the TPP tendency of the less satisfied and the reverse-TPP tendency of the more satisfied—contribute to the TPP nearly as much as the parallel competition between the Beijingers and Hunanese. Furthermore, as shown earlier, even $c = -0.019$ itself is the outcome of fierce competition between two exceedingly strong effects, $PNQ \rightarrow OKN$ ($b_p = 0.272$, $p < 0.001$) and $PNQ \rightarrow SKN$ ($b_p = 0.310$, $p < 0.001$; Model B3, Figure 2).

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of Technical Notes

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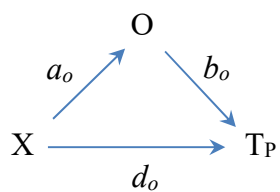
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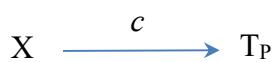
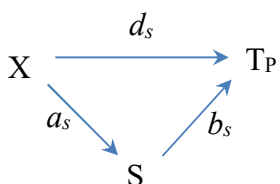
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Figure 1 of Technical Notes:
Other-Self Process and Outcome (OSPO) Analysis



$$d = d_o - a_s * b_s = d_s - a_o * b_o$$



X: FPF;
O: Perceived effect on others;
S: Perceived effect on self;
TP: TTP on 0-1 percentage scale.

Figure 2 of Technical Notes

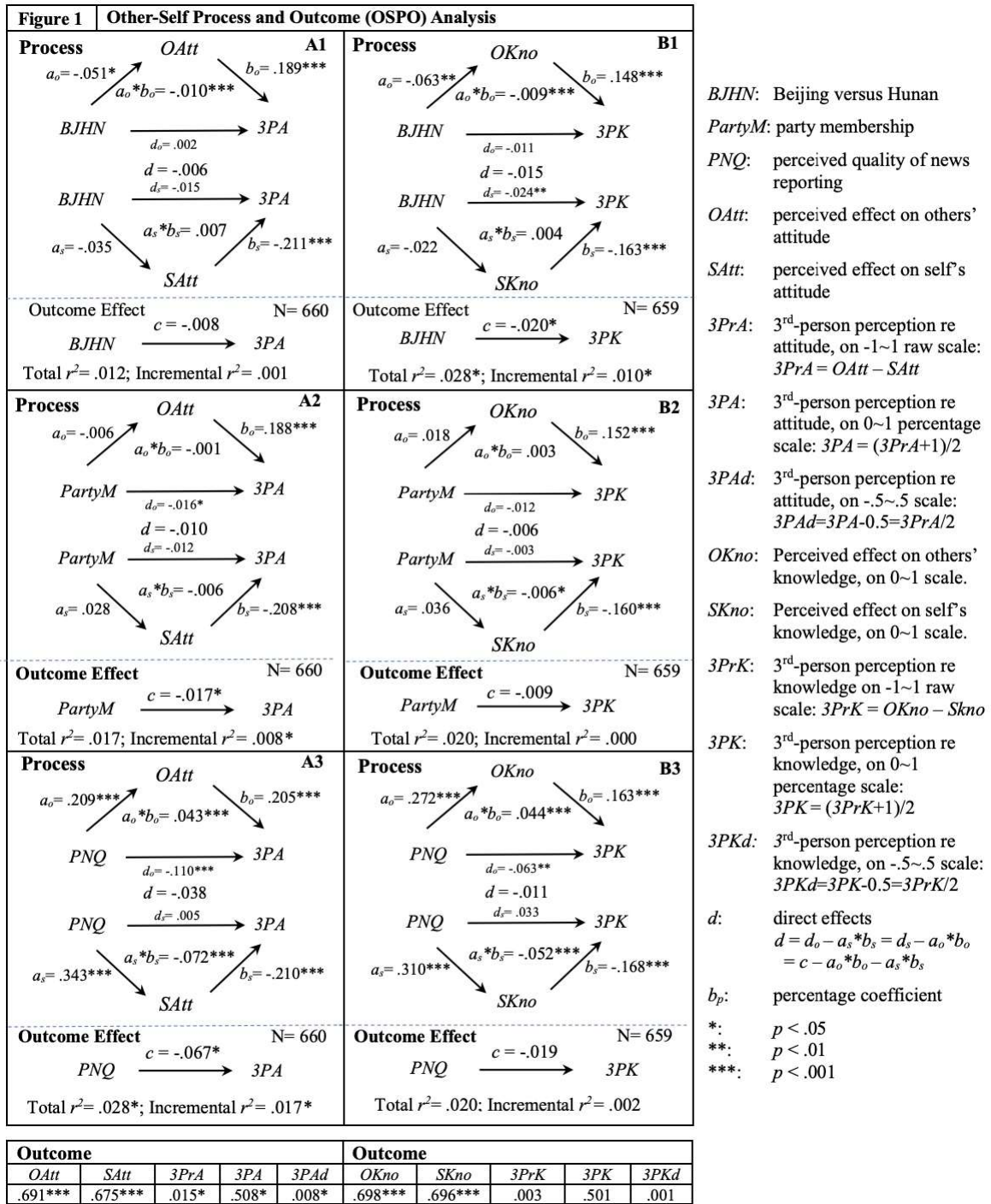


Table 7 of Technical Notes

Other-Self Desirability & Undesirability (OSDU) Analysis

Definitions					Example			
	A	B	C	D	E	F	G	H
1.	Percentage	Other	Self	differential	Percentage	Other	Self	Differential
2.	Undesirable	<i>ou</i> They do bad.	<i>su</i> I do bad	<i>uos=ou-su</i> They do bad more than I.	Attitude Change	<i>ou</i> 0.6907***	<i>su</i> 0.6754***	<i>uos</i> 0.0153*
3.	Desirable	<i>od</i> They do good.	<i>sd</i> I do good	<i>dos=od-sd</i> They do good more than I.	Knowledge Gain	<i>od</i> 0.6980***	<i>sd</i> 0.6954***	<i>dos</i> 0.0026
4.	Differential	<i>oud=ou-od</i> They do bad more than good.	<i>sud=sd-su</i> I do bad more than good.	<i>ar=uos-dso=oud-sud</i>	Differential	<i>oud</i> -0.0073	<i>sud</i> -0.0200***	<i>d₂</i> 0.0127*
5.	Main cell average	<i>av</i> =average of <i>ou, su, od & sd</i>			Main cell average	<i>av</i> =0.6899		
6.	Deviation	Other	Self	Differential	Deviation	Other	Self	Differential
7.	Undesirable	<i>oud=ou-av</i>	<i>sud=su-av</i>	<i>ud=oud-sud</i>	Attitude Change	0.0008	-0.0145	0.0153
8.	Desirable	<i>odd=od-av</i>	<i>sdd=sd-av</i>	<i>dd=odd-sdd</i>	Knowledge Gain	0.0081	0.0055	0.0026
9.	Differential	<i>od=oud-odd</i>	<i>sd=sud-sdd</i>	<i>ar=ud-dd=od-sd</i>	Differential	-0.0073	-0.0200	0.0127
10.	Contribution	Other	Self	Contribution	Contribution	Other	Self	Contribution
11.	Undesirable	<i>ouc=oud</i>	<i>suc=-sud</i>	<i>uc=ouc+suc</i>	Attitude Change	0.0008	0.0145	0.0153
12.	Desirable	<i>odc=-odd</i>	<i>sdc=sdd</i>	<i>dc=odc+sdc</i>	Knowledge Gain	-0.0081	0.0055	-0.0026
13.	Contribution	<i>oc=ouc+odc</i>	<i>sc=suc+sdc</i>	<i>arc=uc+dc</i>	Contribution	-0.0073	0.0200	0.0127
14.	DP Contribution	Other	Self	DP Contribution	DP Contribution	Other	Self	DP Contribution
15.	Undesirable	<i>oup=ouc/2 ar </i> They do bad.	<i>sup=suc/2 ar </i> I do no bad.	<i>up=uc/2 ar </i> They do bad more than I.	Attitude Change	<i>oup</i> 0.0325	<i>sup</i> 0.5699	<i>up</i> 0.6024
16.	Desirable	<i>odp=odc/2 ar </i> They do no good.	<i>sdp=sdc/2 ar </i> I do good.	<i>dp=dc/2 ar </i> I do good more than they.	Knowledge Gain	<i>odp</i> -0.3199	<i>sdp</i> 0.2175	<i>dp</i> -0.1024
17.	DP Contribution	<i>op=oc/2 ar </i> They do bad more than good.	<i>sp=sc/2 ar </i> I do good more than bad.	<i>arp=ar/ ar </i>	DP Contribution	<i>op</i> -0.2874	<i>sp</i> 0.7874	<i>arp</i> 1.0000