

Communicating the Smog: The Mediating Role of Anxiety in the Formation of Public Attitudes Towards Air Pollution Control in Beijing

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Abstract. Public distrust and doubts about policy efficacy and governance capabilities are always of concern to policy-makers; opinion surveys are needed desperately to find out why, for a better communication pattern. Discussions around environmental problems such as the smog in Beijing are no exception. Based on rounds of surveys and interviews with Beijing residents, this study finds: (1) Those participants who ascribed the main cause to the surrounding industrial pollution tended to become very active in speculating on the reasons why car emission has been prioritized at the top of the policy agenda; (2) One trait dimension of the smog anxiety can play a mediating role in their buildup of such distrust and doubts. Its implication reiterates the necessity of making public policy motives and/or considerations available to the public to reduce misunderstandings and build mutual trust.

Keywords: smog anxiety, public opinion, mediation analysis, environmental communication

1. Introduction

Modern society undoubtedly distinguishes itself as “an age of anxiety” in which public concerns have soared about the safety of food, water, air, etc. Recent polls have shown that Chinese people are largely preoccupied with the routinization of such anxiety derived from various concerns [1], of which environmental problems and especially air pollution are overwhelmingly noted.

Despite the announcement of “Clean Air Action Plan” and reports of significant improvements in air quality after its implementation, residents of Beijing, for example, are still haunted by unpleasant memories and restless worries about negative consequences caused by the smog. Doubts about policy efficacy and distrust of related policy-makers have been accumulating over the years every time when the smog occurs. To find out why, it is worth investigating those reasoning processes which underlie the formation of their attitudes towards such measures, with both cognitive and emotional elements involved. Undoubtedly, their assessments mainly depend on their understanding of the effectiveness of policy instruments in relation to what they perceived as the causes of the smog, of which the role of smog-related anxiety also needs to be examined.

2. Literature Review

Before our empirical investigation, it is necessary to lay a solid theoretical foundation to better understand the dynamics of public opinion and especially how public opinions have formed and developed in relation to cognitions and emotions.

2.1. Tracing the Dynamics of the Public Opinion from the Social-Cognitive Perspective

No doubt, when it comes to a public issue where varied interests are involved, opinions are always divided especially as to “why it happened” and “how to tackle it”. To better understand what caused such differences, both individually and collectively, it is worthwhile adopting a social-cognitive approach to trace the trajectory of where and how judgement and inferences about public issues come from. The reasons why social cognition matters have been well elaborated in relation to the study of public opinion formation. Notably, Lippman’s summarization that “Men trust the pictures in their heads” vividly exemplifies the role of schematic processing especially in the emergence of stereotypes and biased opinions [2]. Likewise, Zaller points to the role of “consideration”

(i.e. a blend of cognitive components and related affects), which for example could be activated from memories as predispositions concerning certain issue [3]. Noelle-Neumann explores the dynamics of publicly-shown attitudes from different individuals, especially when facing viewpoints/information that could contradict his/her own [4]. Besides the (re-)formulation of real opinion, the question she raises essentially deals not only with public performance of individuals such as answering the survey questionnaire, but also with its (in-)consistent relation to his/her willingness to do so. This in essence reflects how social cognitions interact with each other in the mechanisms of processing information manifested from the climate of opinion.

2.2. Exploring the Role of Emotions in the Formation of Attitudes

It was not until late 1990s that consistent scholarly attempts have been made to explore the role of emotions (sometimes used with the word “affect” interchangeably) in the cognitive processes [5]. Of those research areas, decision-making researchers are particularly active in developing relevant theoretical approaches. For example, emotions are considered to shape the content of thought via “appraisal tendencies” – which can be activated by certain appraisal dimensions (or elements) that characterize these emotions [6]. Similarly, other findings showed that induced affect could activate related congruent material to form a complex cognitive context in which further information can be processed for subsequent judgements [7]. Furthermore, the term “affective framing” has been coined to describe the way in which both bodily and cognitive elements of emotions contribute to related evaluations [8]. The theory of “affective intelligence” also elaborate why emotion can drive people to pay greater attention to situational factors on the basis of case-by-case rather than blindly relying on prior judgments [9].

On the basis of this, Lerner and Keltner propose a model that emphasizes the necessity to specify how and what influences can be generated from multidimensional discrete emotions via such processes [6]. Besides the valance (i.e. the positive/negative value of emotion), the necessity to note the difference between “integral emotion” (such as feeling anxious) and “incidental emotion” (such as incidental anger) has also been pointed out by showing their own ways of influencing cognitive processes.

H1: The valance of negativity from anxiety correlates positively to the negative tendency of relevant evaluation.

2.3. Conceptualizing the Smog Anxiety with Cognitive Components Identified as Trait Dimensions

The concept of “smog anxiety” was introduced by our research group as a way of understanding why modernity, as mentioned earlier, manifests itself into “an age of anxiety” in contemporary China [10]. It has been conceptualized by identifying its related cognitive components – which can be roughly divided into three categories of trait dimensions in Figure 1, namely, “subjective feelings of uneasiness”(abbreviated as SmgAxt-1-①, SmgAxt-1-②, SmgAxt-1-③separately below), “physiological concerns” (abbreviated as SmgAxt-2-①, SmgAxt-2-②separately below) and “intentions to flee” (abbreviated as SmgAxt-3-①, SmgAxt-3-②separately below).

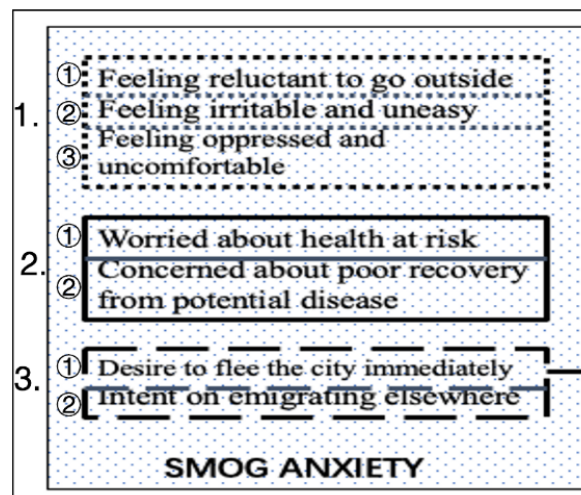


Figure 1. Cognitive components identified as trait dimensions of smog anxiety by the author’s research group for applied communication

In other words, certain specific cognitive element derived from these trait dimensions – rather than the anxiety as a whole – sometimes could (also) play a role in such cognitive processes as judgement-making. So this study proposes another hypothesis based on this:

H2: The role of cognitive judgement is mediated by smog-related anxiety (and/or by its components) in forming public attitude towards certain relevant policy.

Moreover, it is always assumed that there should be the consistency between beliefs about the causes and solutions to the problem [11]. That is to say, a proposed solution is assumed to tackle the corresponding factor that caused the problem. But in real life, cognitive inconsistencies between them could arise due to a possible emotion-eliciting effect. To explore this, another hypothesis is put forward:

H3: Smog anxiety (and related emotions) could contribute to the inconsistency between beliefs about the causes of smog and proposed solutions.

3. Sample and Methods

Therefore, our research group has compiled a questionnaire with a 5-point Likert scale for Beijing residents in which 1) levels of smog anxiety in various trait dimensions as shown in Figure 1, 2) perceptions of what caused the smog, as well as 3) degree of approval towards certain claims relating to policy appraisal – these claims are representative ones that arose from exploratory interviews mainly about evaluations of policy priorities and inferences on policy motives – are measured in a systematical manner.

For the empirical part, it can be roughly divided into two phases: in Phase I, our research groups conducted surveys and collected a total of 220 valid questionnaires from 112 sampled families living in Beijing (with a response rate of 81% and Cronbach's alpha of .849); in Phase II, follow-up group discussions with their respective households were held to further explore the underlying reasons behind their answers on the questionnaires.

4. Results

Based on the analysis of the above data, our study further explores the following aspects. Firstly, correlation between policy appraisal and smog cause attributions in terms of cognitive judgements – which aims to identify what responses towards policy/policy-makers can be generated from separate groups who ascribe the main cause differently. Secondly, the role of smog anxiety and its trait dimensions are separately explored in relation to (1) the smog cause attributions as well as (2) the tendencies of policy appraisal (with an emphasis on those negative ones). Lastly, mediation analysis is employed to analyze the extent to which smog anxiety (both the anxiety as a whole and different trait dimension respectively) can mediate the cognitive judgements about smog causes and relevant tendencies of policy appraisal.

4.1. Cognitive Judgement about Smog Causes and Policy Appraisal

Table 1 shows the overall cognitive responses from the sample in terms of their perceptions about what caused the smog. Undoubtedly, the attribution processes are subsequently associated with “who should be held accountable or blamed”, both for the responsibility of who caused the problem and of those who did not control/stop the problem effectively. For the latter one, it is also about perceptions of who caused the policy failure (i.e. who failed to offer/implement a corresponding effective solution to tackle the factor that caused the problem). So, when it comes to the problem of smog, besides Geographical features as uncontrollable factor, other causes can be roughly divided into three categories: (1) Car emission, (2) Surrounded industrial pollution, and (3) Coal for winter heating. As previous studies from our research group showed, surveyed opinions diverge predominantly with a dichotomy over “whether car emission is the main cause or not” – on the basis of which further explanatory frameworks are developed with more cognitive processes [12]. It is subsequently assumed that those who consider car emission as the main cause would prefer policy priority placed on tackling car emissions, while those who point to the industrial pollution as the main cause tend to emphasize the necessity of industrial innovation and upgrading as solutions.

Table 1. Cognitive judgement about internal and external factors of Beijing that have caused the smog

Cognitive Judgement about Smog Causes			Level of Agreement	
			m	sd
1	Internal human factor: Car emission	Secondary organic aerosol (SOA), which contributes to PM2.5 as a significant component, stems from Nitrogen Oxide (NOx) of car exhausts.	3.77	.75
2	External human Factor(1): Surrounding industrial pollution	a. As steel plants have moved out of Beijing, less and less local industrial pollution contribute to the formation of the smog.	3.73	.84
		b. Coal-reliant heavy industries from surrounding areas cause the smog in Beijing	4.1	.55
	External human Factor(2): Coal for Winter heating	High-sulphur coals burnt for winter home heating in surrounding areas exacerbate the smog in Beijing.	3.74	.78
3	Internal uncontrollable factor: Geography	Geographical features of Beijing (esp. mountains to its north and west) make it difficult to disperse pollutants that originate from the southern plain area.	3.99	.78

Note: Factors inside Beijing itself here are described as “internal”, with those outside Beijing as “external”.

But in reality, there could be inconsistencies between beliefs about the causes and solutions to the problem as mentioned earlier. To better understand this, Table 2 lists claims around the evaluations of what “have done” and perceptions of what “should do”, which mainly targets the policy-makers as political actor who should be held accountable. Firstly, it is no doubt that those who ascribe the main cause to industrial pollutions from surrounding areas tend to doubt the urgency to tackle the car emission: the more they attributed to the industrial pollution, the less approval they tend to show towards Claim 1 shown in Table 2 ($r=-.305$, $p<0.01$). Secondly, as this study finds, there exists positive correlation between the extent attributed to the surrounding industrial pollution and the approval of Claim 2. On the one hand, it is no doubt that those who ascribe the main cause to industrial pollutions from surrounding areas tend to doubt the urgency to tackle the car emission: the more they attributed to the industrial pollution, the less approval they tend to show towards Claim 1 shown in Table 2 ($r=-.305$, $p<0.01$). On the other hand, as this study finds, there exists positive correlation between the extent attributed to the surrounding industrial pollution and the approval of Claim 2.

Table 2. Correlation between some Cognitive Judgments about Smog and Attributions about main cause

Claim	Car emission	Industrial pollution (at least NOT local ones)	Industrial pollution definitely from Surrounding provinces	Coal for Winter heating	Geography factor
1 Car emission should be controlled urgently by the authorities as high polluted factories have already been pulled out of Beijing.	.239*	-.259*	-.305**	.015	-.024
2 The focus of governmental measures on car emission was intended to divert attention from their lack of ability to tackle the surrounding industrial pollution.	-.049	.298**	.256*	.197	.162
3 Car emission was targeted by the authorities as priorities mainly due to their intention to tackle the traffic jam by limiting car numbers.	.012	.067	.048	.031	-.220*

* $p<0.05$, ** $p<0.01$ (two-tailed)

Obviously, “Approval of Claim 2” refers to: 1) the skepticism/suspicion about authorities’ capabilities to tackle the real problem (i.e. “their lack of ability to tackle the surrounding industrial pollution”), as well as 2) active speculation about policy/measure motives with negative inclination (i.e. “The focus of governmental measures on car emission was intended to divert attention”). It in essence reflects the lack of confidence in policy/measure efficacy as well as the lack of trust in policy-makers, both of which could lead to further evaluations of any sign of poor performance as overall “public policy failures”.

It should be noted that, “Approval of Claim 2” could further induce twofold/two-end implications at the policy-support level that could be contradictory with each other: firstly, pessimism about their proposed solutions and critical of the authorities’ priorities from some participants; secondly, understanding of the difficulties and empathy towards the authorities and subsequent support of policy to tackle car emissions by other participants. In other words, a disparity of policy attitudes could arise. To better understand why these two divisions of such disparity are both related to the attribution to the surrounding industrial pollution, it needs to explore it beyond the cognitive level. As explained earlier, emotion such as anxiety could play a role here. Interestingly, it is supposed that anxiety could exacerbate the feelings of urgency and the desire of “something-needs-to-be-done” to tackle the assumed main cause among participants. But meanwhile, the anxiety could activate or deepen a distressing mental state of cognitive dissonance that eventually induces a shift in attitude [13]. Such assumptions will be examined in the following sections.

4.2. Correlation Between Smog Anxiety and Negative Tendencies of Policy Appraisal

As shown earlier, the rationality for judgement-making such as policy appraisal unexpectedly could involve some kind of disruption from the constraints of emotions in the course of information-processing. Such theoretical frameworks based on concepts like “Bounded rationality” was further developed with an emphasis on the exploration of the mechanisms of how different emotions function over there and drive people from rational discussions [5]. Thus, our research group has assumed in **H1** that the negative valence from anxiety could lead to the negative appraisal tendencies.

Indeed, as Table 3 shows, the overall level of smog anxiety correlates positively ($r=.216$, $p<.05$) to the degree of approval of Claim 2 (“The focus of governmental measures on car emission was intended to divert attention from their lack of ability to tackle the surrounding industrial pollution”), in which the negativity such as “the lack of confidence in policy/measure efficacy” as well as “the lack of trust in policy-makers” can be sensed. Meanwhile, its trait dimensions SmgAxt-2-① (i.e. “Worried about health at risk”) and SmgAxt-3-① (i.e. “Desire to flee the city immediately”) also contributed to such negative appraisal tendencies respectively (with $r=.242$, $p<.05$ and $r=.256$, $p<.05$). Similarly, our previous research points out that participants with high level

of anxiety tended to show various forms of confirmation bias as well as disapproval against relevant public policies, with accumulations of other triggered negative emotions such as anger [9].

Table 3. Correlation between some Cognitive Judgments about Smog and Smog Anxiety (incl. Cognitive components identified as trait dimensions)

Claim	Feeling reluctant to go outside	Feeling irritable and uneasy	Feeling oppressed and uncomfortable	Worried about health	Concerned about poor recovery	Desire to flee the city	Intent on emigrating	Overall level of smog anxiety
1 Car emission should be controlled urgently by the authorities as high polluted factories have already been pulled out of Beijing.	-.086	-.003	.019	-.014	-.013	-.087	-.001	-.036
2 The focus of governmental measures on car emission was intended to divert attention from their lack of ability to tackle the surrounding industrial pollution.	.029	.052	.165	.242*	.145	.256*	.186	.216*
3 Car emission was targeted by the authorities as priorities mainly due to their intention to tackle the traffic jam by limiting car numbers.	-.081	-.044	-.016	.092	.058	-.028	.047	.009

*p<0.05, **p<0.01 (two-tailed)

Table 4. Correlation between Smog Attributions about main cause and Smog Anxiety (incl. Cognitive components identified as trait dimensions)

	Feeling reluctant to go outside	Feeling irritable and uneasy	Feeling oppressed and uncomfortable	Worried about health	Concerned about poor recovery	Desire to flee the city	Intent on emigrating	Overall level of smog anxiety
1 Car emission	.050	.178	.121	.244*	.119	.158	.145	.202
2 Industrial pollution (at least NOT local ones)	.050	-.002	.077	.004	-.096	.025	-.001	.010
3 Industrial pollution definitely from Surrounding provinces	.141	.164	.114	.210	.064	.256*	.022	.191
4 Coal for Winter heating	.020	.237*	.111	.201	-.084	.021	-.030	.092
5 Geography factor	.292**	.205	.178	.282**	.145	.205	.200	.295**

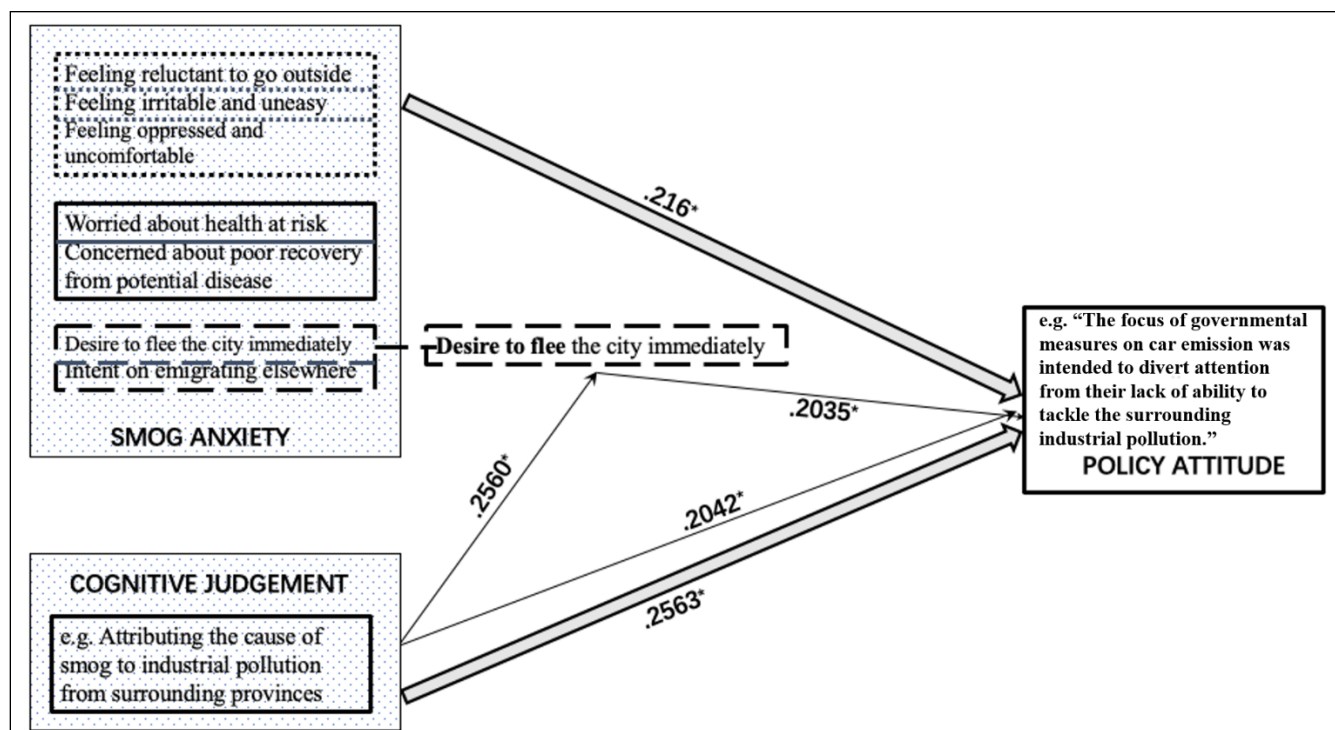
*p<0.05, **p<0.01 (two-tailed)

Furthermore, it should be noted that the feeling of helplessness could arise from the uncertainty associated with certain attribution of smog cause, which in turn echoed with the smog anxiety as a whole and/or one specific trait dimension. As shown in Table 4, the awareness of geography factor (i.e. “Beijing’s ‘dustpan’ topography exacerbates the accumulation of pollutants”) that cannot be tackled by humans unsurprisingly reinforced the overall level of smog anxiety ($r=.295$, $p<.01$) and trait dimensions such as SmgAxt-1-① (i.e. “Feeling reluctant to go outside”; $r=.292$, $p<.01$) and SmgAxt-2-① (i.e. “Worried about health at risk”; $r=.282$, $p<.01$). As our study focuses on public attitudes towards policy efficacy and governance capabilities, the underlying psychological mechanisms behind those attributions to the pollutants were carefully assessed. For those who ascribed the main

cause to car emission, they tended to show more worries about their health as their level of agreement increases (SmgAxt-2-①; $r=.244$, $p<.05$). Meanwhile, those who pointed to the coal from winter heating showed more subjective feelings of uneasiness – SmgAxt-1-② – as they agreed more with that ($r=.237$, $p<.05$). Notably, for those who realized the core problem lies in the areas that surround the city of Beijing, which calls for a more coordinated control of industrial pollution between different municipalities, they tended to exhibit “intentions to flee” such as described in SmgAxt-3-①: the more they agreed with this attribution, the more tendencies they exhibited to flee ($r=.256$, $p<.05$). This association could be reinforced by a sense of despair over their inference that the related authorities were largely reluctant to shut down those highly-polluting factories as potential economic recession scenarios like “GDP decline” could be triggered. One of the most frequently quoted words emerged like this: “This is somewhat related to economic development; the relevant authorities do not want economic growth to slow down”.

4.3. Exploring how Smog Anxiety and its Components can Mediate Cognitive Judgements

Mediation analysis (see Figure 2) is always employed to examine if there has been a mediator involved in a relationship between two variables [14]. As shown earlier, there is an association between the attribution to the surrounding industrial pollutions and the lack of confidence and trust in policy, both of which are tested to be correlated to the smog anxiety and/or its trait dimension(s). Thus, such emotion could mediate, entirely or partially, in this relationship.



Note: All coefficients are completely standardized.

Figure 2. Mediation analysis of anxiety component

Table 5. Indirect effect of cognitive judgement on policy attitude via smog anxiety trait

Indirect effects	Point estimate	SE	LL95	UL95
Desire to flee the city immediately	.0767	.0581	.0000	.2205

PROCESS macro in SPSS was employed to analyze the extent to which smog-related anxiety, both the anxiety as a whole and different components respectively, can mediate the cognitive judgements about smog causes and relevant tendencies of policy appraisal. Obviously, the data from this study cannot show a significant relationship between the overall level of smog anxiety and different items of attribution claim as mentioned in Table 4. However, one of its trait dimensions (i.e. SmgAxt-3-① “Desire to flee the city immediately”) was identified as positively correlated to the attribution claim pointing to the industrial pollution from the provinces surrounding the city of Beijing, despite there is no significant relation with the smog anxiety in overall ($b=2.0943$,

SE=1.1906, $p > .05$, indirect effect $b = .0488$, SE=.0492, 95% BCa CI = [-.0134, .1718]). Given this attribution claim also correlates significantly to certain policy appraisal in Table 2 ($r = .2563$, $p < .05$), it is worth exploring what other factors have also contributed to such disapproval of policy approach dedicated to car emission. To achieve this, this study continued to examine the possibility of cognitive association with “smog anxiety” by narrowing down to its specific trait dimensions that we have identified in relation to various cognitive components.

Notably, “the desire to flee the city immediately” (SmgAxt-3-①) can mediate the reasoning process in which those who point out the surrounded industrial pollution tend to show more distrust of policy-makers ($b = .2563$, SE=.1571, $p < .05$, indirect effect $b = .0767$, SE=.0581, 95% BCa CI = [.0000, .2205]). In this process, heavy industry pollution from surrounding areas like Hebei province were pointed out by these Beijing residents, but at the same time they can also realize the difficulties of restructuring them (esp. steelmaking, coal-fired power plants). Meanwhile, cognitive element derived from the item of “the desire to flee immediately” (SmgAxt-3-①), rather than the anxiety as a whole or other components, has been activated as a part of the “complex cognitive context”, or to be precisely, a “connecting point” that bridge other cognitive processes as a full “judgmental circuit” (c.f. Hamilton, Stroessner and Mackie [7]). In other words, given that surrounding industrial pollution as external factors cannot be sorted out easily, one of the best options available to these Beijing residents is supposed to flee the city or this area at least temporarily when smog become severe. But their intentions to flee were largely constrained by reality concerns such as employment and family life – which inevitably led into a state of helplessness wherein further negative emotions could be accumulated. Under this circumstance, as a result of “heightened information processing” as described by Schwarz [15], these residents are motivated to generalize the assumption/belief derived from previous ones (i.e. the lack of ability to tackle industrial pollution surrounded) to other cognitive processes – as shown in their evaluation of policy approach dedicated to car emission.

As explained earlier, the feeling of helplessness could arise from the uncertainty associated with “when and how to tackle the surrounding industrial pollution”, which indeed amplify the pre-existing anxiety. Of those specific trait dimensions, SmgAxt-3-① plays a mediating role by further reinforcing the cognitive link between the attribution to the industrial pollution and the lack of confidence and trust, thus strengthening the disparity – as mentioned earlier – of attitudes towards current policy priorities. On the one hand, driven by such complex of anxiety, some participants have become increasingly eager to see the decisive implementation of the plans they support and reinforced their belief that “something-needs-to-be-done” immediately about the surrounding industries. Specific measures targeting those highly-polluting enterprises such as “imposing a smog tax and/or heavy penalties” were highly recommended by a majority of them, with strong languages also used to condemn their lack of social responsibility. As one participant put, “If the authorities don't impose strict penalties, these factories will continue to emit pollution. What else can you do? The only solution is to strengthen law enforcement” (Participant A, male, Group 75). On the other hand, to relieve such complex of anxiety, other participants who showed empathy towards the authorities' difficulties were induced to shift their proposed solutions towards controlling vehicle emissions instead, for the sake of at least “something-needs-to-be-done”. Such an adjustment in attitude is precisely a modification they make to mitigate the emotional discomfort according to Festinger's theory of “cognitive dissonance” [13]. This can also be explained by the theory of “affective intelligence” wherein situational factors were paid greater attention instead of prior judgements [9]. It should be noted that at the cognitive level they can understand that restructuring and upgrading relevant industries would be costly and time-consuming whereby other feasible alternatives should be conceded. Moreover, other considerations such as “the indispensability of certain industries/products” and “potential loss of livelihood for related workers with the shut-down of factories” had also reinforced their empathy like “It is completely impossible to ban such industries entirely” (Participant B, female, Group 56).

5. Conclusion and Discussion

This paper echoes the call from Cairney and Kwiatkowski for a better policymaker-public communication pattern that allow the public to engage positively and constructively by understanding how their own cognitive bias can come out and thus becoming empathetic towards policy-makers' limits [16]. Previous study from our research group also advocates a model of facilitating the constructive interaction between the public and policy-makers so that a kind of consensus can be reached to the degree that all the efforts from different interest group can be coordinated to tackle their common concerns foremost [17]. The core element for our model is to build channels for all parties to get their own concerns and “considerations” (a blend of cognitive components and related affects as mentioned earlier) visible to each other so as to build trust and eliminate misunderstandings as much as possible. On the basis of these studies, it is evident that opinion surveys and research outputs like this paper are needed desperately to investigate the roles played by both cognitions and emotions in the formation of certain attitudes by different specific groups – which undoubtedly would be useful especially for self-reflections when confrontations and deadlocks have arisen.

Taking our findings in the paper for example, those participants who attributed the main cause to the surrounding industrial pollution tended to become very active in speculating on the reasons why car emission has been prioritized at the top of the policy agenda, with very negative inclination. Clearly, their initial awarenesses have been aroused by cognitive differences between their assumed cause and official proposed solutions. The trait dimension of smog anxiety (i.e. SmgAxt-3-①), as our study finds, can play a mediating role in their buildup of distrust and doubts about policy efficacy and governance capabilities. But further cognitive processes promoted by the smog anxiety have become complicated, as their attitudes towards the prioritized measure itself and the policy-makers become overwhelmingly divided: On the one hand some of these participants have reinforced their belief that

“something-needs-to-be-done” about the surrounding industries with more anxiety-oriented urgency added – which inevitably leads to their criticisms about the authorities’ handling of the smog problem as “improper”; On the other hand, empathy towards the authorities have been generated from other participants who can understand that restructuring and upgrading relevant industries would be costly and time-consuming, but their recognition of at least “something-needs-to-be-done” to alleviate the state of anxiety eventually induces their support of official stance that prioritized tackling car emission.

Based on the above discussions, it suggests that tackling environmental problems such as the smog not only involves implementation but also calls for a better communication that can gain public support for a certain initiative to the greatest extent possible. (That is also why our paper is titled with “communicating the smog”). As our study shows, two factors that arise from the psychological mechanism have impeded such communication and caused various degrees of disapproval among participants: the smog anxiety itself and speculations about policy motives. To act accordingly, our research group has already called for institutional measures to alleviate such anxiety caused by the smog [12] and here want to emphasize it again, as this paper has shown that the trait dimension of smog anxiety contributes to the buildup of distrust and doubts about policy efficacy as a mediator. Moreover, our research group reiterates the necessity of making policy motives and/or policy considerations publicly available to the public, helping to reduce misunderstandings or speculations as much as possible by eliciting their empathy towards policy-makers, especially when a rational choice has been made officially. Except those hardcore ones who refuse to comply, most people could become cooperative and supportive of any policy if they are well informed about its unique feasibility and benefits compared to other alternative options (like those participants who can understand the reasoning behind the official initiatives that cannot prioritize tackling industrial pollutions). Thus, multi-dimensional platforms and channels should be established, as our research group points out earlier [17], for a more open and transparent media environment where the diffusion of necessary information as well as constructive dialogues can take place. Only in this way can mutual trust be built between the public and the policy-makers with more effectiveness of policy implementations that can address real concerns.

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References

- [1] He, Q. (2009). *A Psychological Study of Media Coverage on Food Safety in China*. Beijing: Communication University of China Press.
- [2] Lippmann, W. (1922). *Public Opinion*. New York: Macmillan.
- [3] Zaller, J. (1992). *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.
- [4] Noelle - Neumann, E. (1993). *The Spiral of Silence: Public Opinion—Our Social Skin*. Chicago, IL: University of Chicago Press.
- [5] Lerner, J. S., Li, Y., Valdesolo, P., & Kassam, K. S. (2015). Emotion and decision making. *Annual Review of Psychology*, 66(1), 799-823.
- [6] Lerner, J. S., & Keltner, D. (2000). Beyond valence: Toward a model of emotion - specific influences on judgement and choice. *Cognition & Emotion*, 14(4), 473-493.
- [7] Hamilton, D. L., Stroessner, S. J., & Mackie, D. M. (1993). The influence of affect on stereotyping: The case of illusory correlations. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, Cognition and Stereotyping* (pp. 39-61). San Diego, CA: Academic Press.
- [8] Maiese, M. (2014). How can emotions be both cognitive and bodily? *Phenomenology and the Cognitive Sciences*, 13, 513-531.
- [9] Marcus, G. E., Neuman, W. R., & MacKuen, M. (2000). *Affective Intelligence and Political Judgment*. Chicago, IL: University of Chicago Press.
- [10] Li, C., & Tao, M. (2021). A mixed - method study of anxiety caused by the smog and its social - psychological impacts. *Psychological Monthly*, 16(4), 4-8.
- [11] Ogden, J., & Jubb, A. (2008). How consistent are beliefs about the causes and solutions to illness?: An experimental study. *Psychology, Health & Medicine*, 13(5), 505-515.
- [12] Li, C. (2021). Exploring cognitive stereotyping and bias in the attribution of smog formation in Beijing: An information processing and Communication Approach. *Journal of Beijing City University*, 6, 16 - 26.
- [13] Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- [14] Moring, B. (2014). *Research Methods in Psychology: Evaluating a World of Information*. New York: WW Norton & Company.
- [15] Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of Motivation and Cognition: Foundations of Social Behavior* (Vol. 2, pp. 527-561). New York: The Guilford Press.
- [16] Cairney, P., & Kwiatkowski, R. (2017). How to communicate effectively with policymakers: combine insights from psychology and policy studies. *Palgrave Communications*, 3(1), 1 - 8.
- [17] Li, C. (2021). Towards a consensus of opinion on smog - related issues – From a communication perspective of environmental sciences. *Public Communication of Science & Technology*, 13(20), 6 - 13.