

low-profit firms, as well as those who were laid off. Comparing risk perception across different subgroups can shed some light on understanding what factors may determine one's perceived risk level, which is a crucial question but without a conclusive answer yet. Researchers seek to explain what risks people worry about and how much they worry from different perspectives. The important factors include the actual exposure to risk, mass media coverage, culture, and psychometric risk characteristics.

1.1. A

The most straightforward explanation about how people perceive risks is “of course people are worried they have lots to worry about.”⁽⁵⁾ Although being challenged frequently, the actual extent of danger sometimes is a very potent predictor for perceived risk.⁽⁶⁾

Although a precise estimate is hard to get, casual observation indicates that disease is one of the leading causes of fatalities and injuries for the average Chinese. In addition, experts assess road traffic injury as “the leading cause for population up to the age of 45 years and the leading cause of working-life years lost in China. An average of 229 people is killed as the result of road traffic crashes every day.”⁽⁷⁾ If perceived risk is determined by the actual exposure to hazard, we expect these two hazards to be among the top risk items that concern Chinese participants in general.

Sjöberg *et al.* contrasted two models regarding the impacts of different levels of threat.⁽⁸⁾ The first model is Maslow's model on a hierarchy of needs—people only worry about more remote risks after the most urgent needs have been taken care of. Their findings did not support this model. For example, Brazilian slum dwellers, who lived an extremely poor life, were also worried about technology risks. The second model is a U-shaped pattern that was observed in a study on nuclear power plant employees.⁽⁹⁾ It appears that a strong threat would make unrelated risks seem to be smaller, whereas a mild-to-moderate threat tends to increase the perceived level of all risks.

1.2.

Perceived risk can also be influenced by mass media content because it makes some information more retrievable than others, which is commonly referred to as “availability heuristics.”⁽¹⁰⁾ People tend to overestimate some risks that are more frequently reported or more dramatic, and ignore other risks that are less

covered by the mass media. In China today, the importance of political stability and economic development has been emphasized through authentic mass media coverage, whereas the risks associated with high technologies such as nuclear power and genetic engineering are less actively discussed in public. The risk of nuclear war is not emphasized by the mass media either.

1. .

Cultural theory suggests that people choose what to fear to maintain their way of life.^(5,11) Although a systematic relationship has been identified from the empirical studies,⁽⁵⁾ it is relatively weak given the low variance explained by cultural factors.⁽⁶⁾ According to this perspective, *cultural biases*, which correspond to deeply held values that justify different patterns of social relations, can predict a broad spectrum of which types of hazards people will be concerned about.⁽⁵⁾ Typical patterns of social relations include hierarchy, egalitarianism, or individualism. Adherents of hierarchy tend to worry more about social deviance, which may disrupt the established forms of social relations, but worry less about technology risks because of their trust in experts and authorities. Individualists also worry less about technology risks but for a different reason: they view nature as an unlimited resource for human beings to explore. They worry about social deviance only if it would disrupt market relations or freedom. Cultural theory predicts that egalitarians worry more about technology risks because they believe an egalitarian society is more likely to do harm to the environment as well as to poor people, but they perceive less risk of war because they believe it is exaggerated either by a coalition of hierarchy or by individualists who try to justify an egalitarian system.⁽⁵⁾ In a country like China that has relatively higher power distance (such that there is much inequality present in society and more power translates into more privilege) and strong hierarchical cultural roots due to the Confucian heritage, we would expect people to worry more about war and social deviance that threaten the established forms of social relations, and worry less about technology risks. Other cultural dimensions can also be important. For example, Weber and Hsee found that Chinese respondents perceive monetary risks as being lower than their U.S. counterparts, but the attitudes toward perceived risks are not significantly different.⁽¹²⁾ They proposed a “cushion hypothesis”: it is relatively easier to seek monetary support from social connections in the collectivist culture like China, which provides a “cushion” to

2.2. - 2.2.1. 2.2.2.

During the past two decades, China has witnessed dramatic changes in its social, economic, and political systems. The dynamics and diversities in present-day China offer us excellent research opportunities to observe how people with different social experiences perceive potential risks. During the transition from a central planned economy to a market economy, one of the painful processes is that in order to improve efficiencies, many state-owned industries have had to lay off a large number of surplus employees. This process resulted in the large-scale so-called xia-gang phenomenon, which refers to being laid off by state-owned industries. These laid-off employees were used to having life-long jobs, and were never concerned about unemployment before they endured this painful shock. Conceivably, such an abrupt change could exert a lot of financial and psychological pressure on one's life. This special and sensitive group deserves more attention. The aim of the second survey was to gain some comprehensive understanding of the psychological state of laid-off workers through the analysis of their risk perceptions. The results could reflect mutual influences between the overall social development and individual psychological status.



1.

3.1.1. Participants

A total of 847 respondents were recruited from Beijing and other cities in China in 1996. There were 430 men and 376 women participants, with gender information not provided for 41 participants. The average age was 32.95 years, with 320 participants between 18 and 24 years of age, 254 participants between 25 and 39 years, and 227 participants aged 40–55 years. Most of them were well educated: 598 had a college degree, and 121 had completed secondary school. The whole sample formed six subgroups based on their occupational backgrounds: 122 officials, 112 managers, 90 staff and workers, 120 professors, 299 students, and 104 others.

3.1.2. Procedures

The highest 28 risk items in the pilot survey were selected for the current study. These items are related to social issues, everyday life activities, natural disasters,

and science and technology developments. At the beginning of the questionnaire, the risk items were explained to the participants. Based on the risk indices discussed in Section 2.1, the participants were asked to assess each risk item from three perspectives on a 1–10 point scale: (1) the importance of the risk items to individuals and society; (2) the magnitude of possible loss caused by the risk items; and (3) the possibility of the actual realization of the consequences caused by the risk item. The perceived degree of risk is the composite of the three indices.⁵

2.

3.2.1. General Risk Rating

Table I shows that six risk items were rated greater than 7 on the 1–10 point scale. The lowest rating item is railway transportation (mean = 4.93, $SD = 2.50$), and the highest rating item is nuclear war (mean = 7.82, $SD = 3.08$). The t -test shows that a significant difference came between the sixth and seventh risk items: low security (mean = 6.96, $SD = 2.02$) and social moral degradation (mean = 7.14, $SD = 2.05$). Therefore, we refer to the highest six items as “high-risk items” in the following analysis.

3.2.2. Differences Between Occupational Groups

Table I also demonstrates the perceived risk level by each occupational subgroup. The ranks of 28 risk items are correlated among all five occupational subgroups ($p < 0.01$) (Table II). Furthermore, the ranks of the six high-risk items are also correlated among the five subgroups.

However, MNOVA shows significant differences in average risk rating scores across five groups ($F(4,112) = 3.136$, $p < 0.001$). Only eight items do not show significant differences, among which three items are high-risk items. They are national turmoil, economic crisis, and overpopulation, which are among the topics that frequently appeared in the Chinese mass media.

The manager subgroup and staff/worker subgroup assigned higher ratings to certain risk items than the other subgroups. These items are low income ($F(4,112) = 24.74$, $p < 0.001$), house shortage ($F(4,112) = 19.66$, $p < 0.001$), and disease ($F(4,112) = 12.17$, $p < 0.001$). Besides, compared to the other four subgroups, the staff/worker subgroup showed

⁵ In a previous study conducted by one of the authors, these indices were found to be significantly correlated, and came out as a factor that could explain 34.2% variance.⁽¹⁹⁾

• Rank and Average Risk Rating (1—Least Risky, 10—Most Risky) by Whole Sample and Five Occupational Subgroups

Items	Mean (<i>SD</i>)										Rank			
	Whole Sample					Staff/Workers					Whole Sample			
	Managers	Managers	Managers	Managers	Managers	Managers	Managers	Managers	Managers	Managers	Managers	Managers	Managers	Managers
Nuclear war	7.90 (3.07)	7.73 (3.27)	6.90 (3.66)	8.29 (2.73)	7.99 (2.98)	8.20 (2.78)	1	2	13	1	2	1	2	1
National turmoil	7.85 (2.40)	7.94 (2.12)	7.40 (2.74)	8.06 (2.40)	7.99 (2.28)	7.57 (2.64)	2	1	8	2	1	1	1	3
War	7.66 (2.69)	7.73 (2.84)	6.91 (3.25)	7.69 (2.63)	7.74 (2.49)	7.95 (2.60)	3	3	12	3	3	3	3	2
Economic crisis	7.37 (2.06)	7.26 (2.01)	7.44 (2.35)	7.15 (2.22)	7.59 (1.87)	7.14 (2.14)	4	6	7	5	4	4	4	4
Overpopulation	7.24 (2.27)	7.05 (2.57)	7.45 (2.64)	7.28 (2.28)	7.40 (1.99)	6.83 (2.31)	5	10	5	4	5	5	5	7
Social moral degradation	7.14 (2.02)	7.46 (1.86)	7.91 (1.98)	6.83 (2.20)	7.05 (1.91)	6.80 (2.08)	6	4	2	6	6	7	7	8
Low security	6.98 (1.97)	7.45 (1.92)	7.27 (2.20)	6.42 (2.02)	6.93 (1.90)	7.03 (1.85)	7	5	9	10	9	9	9	5
Food shortage	6.93 (2.46)	6.81 (2.61)	6.22 (2.93)	6.77 (2.42)	7.26 (2.22)	6.92 (2.50)	8	14	21	8	6	6	6	6
Environmental pollution	6.93 (2.08)	7.22 (2.07)	7.60 (2.17)	6.42 (2.02)	7.05 (1.93)	6.55 (2.15)	9	7	4	10	8	8	8	9
Energy crisis	6.75 (2.14)	6.72 (2.28)	7.06 (2.33)	6.52 (2.16)	6.86 (2.03)	6.48 (2.07)	10	15	11	9	10	10	10	10
Crime	6.67 (2.13)	7.15 (2.13)	6.69 (2.43)	6.18 (2.36)	6.78 (1.90)	6.42 (2.08)	11	8	16	13	11	11	11	11
Inflation	6.41 (2.12)	6.88 (2.11)	7.68 (2.21)	6.36 (2.00)	6.05 (1.96)	5.97 (2.11)	12	13	3	11	12	12	12	14
Earthquake	6.34 (2.68)	6.96 (2.75)	6.31 (2.90)	6.79 (2.61)	5.90 (2.49)	6.40 (2.80)	13	12	19	7	17	17	17	12
Poor-quality products	6.21 (2.30)	6.28 (2.46)	7.45 (2.53)	5.98 (2.25)	5.97 (2.12)	6.04 (2.22)	14	20	5	15	13	13	13	13
Low income	6.05 (2.49)	6.98 (2.36)	7.93 (2.43)	6.02 (2.28)	5.42 (2.31)	5.33 (2.31)	15	11	1	14	24	24	24	23
Political disturbances	6.02 (2.32)	6.49 (2.40)	6.36 (2.65)	5.88 (2.41)	5.92 (2.11)	5.76 (2.33)	16	17	18	16	15	15	15	18

Correlations of Risk Ranking among Five Occupational Subgroups

	Managers	Staff/Workers	Officials	Students
Staff/Workers	0.719			
Officials	0.843	0.624		
Students	0.768	0.541	0.822	
Professors	0.818	0.530	0.922	0.957

particular concern for two items: inflation ($F(4,112) = 12.19$, $p < 0.001$), and poor-quality products ($F(4,112) = 7.67$, $p < 0.001$). These differences may reflect the fact that staff/workers are actually paid less and enjoy less social welfare benefits than managers and other groups.

3.2.3. Gender Differences Within Each Occupational Subgroup

Previous studies have documented that men tend to judge risks as smaller and less problematic than women.^(3,20,21) In this study, different patterns of gender differences emerged in each occupational group. To facilitate the comparison, for each occupational group, risk items were grouped by *R*-type cluster analysis into several categories. The gender difference for each risk category was then compared within each occupational group.

1. *Official subgroup*: Risk items were grouped into seven categories by cluster analysis. Only one category of items presents significant gender differences ($F = 7.058$, $p < 0.01$). This category includes poor medical service, low income, disease, inflation, poor-quality products, energy crisis, and political and economic reform.
2. *Manager subgroup*: All six clustered risk categories show significant gender differences ($F_1 = 7.27$, $p < 0.01$; $F_2 = 3.97$, $p < 0.05$; $F_3 = 9.12$, $p = 0.01$; $F_4 = 10.50$, $p < 0.01$; $F_5 = 20.41$, $p < 0.001$; $F_6 = 15.51$, $p < 0.001$). The degrees of risk are unanimously higher for women than those of men for each category.
3. *Staff/worker subgroup*: Gender difference only displays in one of the six risk categories ($F = 7.46$, $p < 0.01$). This category includes drug taking, earthquake, flood, fire, disease, broken family, and traffic accident, most of which are related to natural disaster and daily life.
4. *Professor subgroup*: MNOVA shows that two of the seven risk categories display gender dif-

ferences ($F_1 = 3.85$, $p = 0.05$; $F_2 = 4.72$, $p < 0.05$). One category is related to natural disasters, e.g., earthquake and flood; the other category seems to be science- and technology-related risks, such as electric power, nuclear power, and railway transportation. Different from the above subgroups, no gender difference appears in daily-life-related risks.

5. *Student subgroup*: Five of six categories show gender differences ($F_1 = 12.02$, $p < 0.01$; $F_2 = 8.92$, $p < 0.01$; $F_3 = 2.63$, $p = 0.1$; $F_4 = 13.82$, $p < 0.001$; $F_5 = 4.51$, $p < 0.05$). Only one category does not have gender difference, which includes poor medical service, low income, disease, broken family, housing shortage, and political and economical reform.

4. PARTICIPANTS

4.1. Participants

4.1.1. Participants

The second survey was conducted from the city of Qingdao in Shandong province in northeastern China in 1998. There were 374 participants, including 132 men and 211 women (gender information not provided for 31 participants), with 105 participants aged below 25 years, 164 participants at 25–39 years, and 75 participants above 40 years of age. Among them, 122 had a college degree, and 88 had completed secondary school. These 40 dis-

Items	Mean (<i>SD</i>)			Rank		
	Laid-Off Sample	On-Job Sample	Difference	Laid-Off Sample	On-Job Sample	Difference
Low income	9.19 (1.58)	7.56 (2.24)	1.63*	1	14	−13
Poor-quality products	8.77 (1.78)	7.53 (2.42)	1.24*	2	15	−13
Poor medical service	8.77 (1.67)	7.59 (2.41)	1.18*	3	12	−9
Social moral degradation	8.67 (2.06)	7.68 (2.24)	0.99*	4	7	−3
Diseases	8.63 (2.37)	7.41 (2.63)	1.22*	5	18	−13
Economic crisis	8.57 (2.35)	7.79 (2.29)	0.78*	6	4	2
Low security	8.55 (1.95)	7.34 (2.34)	1.21*	7	19	−12
Inflation	8.41 (2.48)	7.30 (2.25)	1.11*	8	20	−12
Environmental pollution	8.23 (2.23)	8.20 (1.84)	0.03	9	1	8
Drug taking	7.56 (2.95)	7.46 (2.74)	0.10	10	17	−7
Crime	7.47 (2.83)	7.64 (2.39)	0.10	11	9	2
Food shortage	7.41 (3.12)	7.64 (2.44)	−0.23	12	8	4
Floods	7.36 (3.01)	7.59 (2.16)	−0.23	13	11	2
Fire accidents	7.35 (2.75)	7.48 (2.22)	−0.13	14	16	−2
House shortage	7.32 (2.85)	6.83 (2.46)	0.49	15	23	−8
Electric power	7.24 (2.66)	7.23 (2.37)	0.01	16	22	−6
Traffic accidents	7.18 (2.87)	7.26 (2.42)	−0.08	17	21	−4
Earthquake	7.17 (3.11)	7.56 (2.32)	−0.39			8

• Rank and Average Risk Rating (1—Least Risky, 10—Most Risky) by Low-Profit/Laid-Off Sample and High-Profit/Foreign-Firm Sample

Items	Mean (<i>SD</i>)			Rank		
	Low-Profit/ Laid-Off Sample	High-Profit/ Foreign-Firm Sample	Difference	Low-Profit/ Laid-Off Sample	High-Profit/ Foreign-Firm Sample	Difference
Economic crisis	8.14 (2.20)	7.61 (1.97)	0.53*	1	5	−4
Low income	7.97 (2.26)	6.73 (2.33)	1.24*	2	19	−17
Environmental pollution	7.81 (2.19)	7.63 (1.94)	0.18	3	4	−1
Low security	7.73 (2.24)	6.97 (2.16)	0.76*	4	15	−11
Social moral degradation	7.68 (2.37)	7.32 (2.19)	0.36	5	8	−3
Poor medical service	7.65 (2.36)	6.93 (2.42)	0.72*	6	16	−10
Inflation	7.65 (2.44)	6.73 (2.11)	0.92*	7	19	−13
Diseases	7.61 (2.26)	7.17 (2.40)	0.44	8	12	−4
Basic quality of life	7.49 (2.16)	7.35 (2.15)	0.14	9	11	−2
Powerlessness	7.48 (2.15)	7.23 (2.15)	0.25	9	10	−1
Economic power	7.48 (2.15)	7.23 (2.15)	0.25	9	10	−1

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better protected financially, and partly because they are one of the groups that most closely interact with professors. In future studies, it would be interesting to see whether different subgroups differ in the cognitive map of perceived risks. For example, whether a laid-off worker disagrees with an on-job worker on how unknown or how dreadful nuclear war and high-tech risks are. Whether different subgroups actually place different importance weights on the different risk dimensions, such as whether laid-off workers care less about the risks that have an impact on future generations. The latter difference is more fundamental in one's value systems.

The greater concern about national turmoil and economic crisis in all groups, and the smaller concern about the nuclear power plant, may be explained by both mass media and cultural roots. The importance of political stability and economic growth has been strengthened by the authentic media in China, and the messages about high-technology risks such as a domestic nuclear power plants are not intensive, if any, and most of these are positive images. But mass media coverage cannot explain why nuclear war is of most concern to the Chinese, because this risk is not discussed frequently in the mass media. Culture can also play an important role. In a culture with high power distance and a hierarchical tradition like China, the cultural theory will predict stronger worry about war and social deviance, and less worry about high-technology risk. However, the mass media and cultural roots seem to be less plausible when explaining the subgroup differences because we have no strong reasons to expect laid-off status to change one's fundamental cultural bias and one's exposure to the mass media.

Compared with the pilot survey in 1994, the attention of the public has shifted from more individual and self-concerned problems to those macro problems related to the development of the whole society. One finds that inflation and food shortage were ranked in the top six items in the 1994 survey, but were ranked significantly lower in the current study. It is not clear whether the change is caused by actual change in risk levels, or by difference in mass media content, or any other reasons. The underlying reasons for the dynamics of public risk perception demands further investigation.

The main pattern of gender differences supports previous findings that women tend to perceive higher risks than men.^(3,20,21) However, gender differences seem to interact with occupational affiliation. It is interesting to find that gender differences are more

extensive within the managers' sample, whereas the sample of officials and professors exhibits fewer gender differences. It may reflect the subtle differences in social con

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