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Article

Situational Consistency of Risk-Taking in Daily Life

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Situational consistency (consistency within a situation and consistency between situations) plays a significant role in understanding risk-taking. The present study tests the situational consistency of risk-taking. A questionnaire survey was administered to 197 undergraduate and graduate students, using items related to risk-taking in five (Traffic, Health, Financial, Social, and Crime prevention) situations. The results did not necessarily support the situational consistency of risk-taking, but did suggest three latent factors influencing situational consistency. Focusing on the results of the present study will enable a deeper understanding of the mechanisms and individual differences involved in risk-taking.

Key words: risk-taking, consistency, situation, safety

INTRODUCTION

Risk-taking is defined as a risky behavior involving the implementation of options that could lead to negative consequences (Byrnes, Miller, & Schafer, 1999). For example, in a traffic situation, risk-taking (e.g., ignoring a red light) might lead to a traffic accident. In a social situation, breaching a contract with a business friend may lead to litigation because of loss of confidence. Thus, finding ways to decrease risk-taking has become an important topic in traffic and social psychology.

The situational consistency of risk-taking has two meanings: consistency within a situation and consistency between situations. Each plays a significant role in understanding risk-taking. An example of the former in a traffic situation is that a person who tends to drive fast has a tendency to ignore red lights. Support of this consistency suggests the existence of a safety attitude and risk propensity (Nakai & Usui, 2006). An example of the latter is the tendency of a person who takes risks in one situation also tends to do so in another situation. Understanding the characteristics of such a person is useful in extracting factors that impact risk-taking and developing an intervention to prevent risk-taking. Most previous studies on risk-taking have focused on behavior in a specific situation. For example, in order to understand risk-taking in traffic situations, certain behaviors (e.g., driving fast and not wearing a seatbelt) were treated as indicators of risk-taking (e.g., McKenna & Horswill, 2006; Yoshida, 1995; Nakai & Usui, 2006). Research has indicated that to solve the problem in a specific situation, more valid results may be obtained by treating and analyzing many behaviors involved in the situation. However, consistency within the situation should be verified on such occasions. Based on the results of observational research, Yoshida (1995) argued that drivers who wore their seatbelts were not necessarily look more carefully for their safety than drivers who did not wear seatbelts. This is one of several studies that failed to support consistency within a situation. In contrast, Nakai & Usui (2006) examined consistency in traffic situations using many variables (e.g., stop and speed). Their results largely supported the consistency issue. There have been arguments for and against consistency within traffic situations, and research has thus far focused on only this type of situation.

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The consistency of risk-taking between situations has also been tested in previous studies. The study of Weber et al. (2002) suggested that risk attitudes correlated with one another in several situations. Haga, Akatsuka, Kusukami, and Kon-no (1994) suggested that a person who takes more risks in daily situations (e.g., "I stood on a rotating chair in order to take something out from a high place") exhibited more risk in traffic situations (e.g., "In the morning, when going to a station by bicycle, I crossed at the intersection in spite of a red light, because there was no car coming") and driving situations (e.g., "I drove without wearing a seatbelt when going to a nearby store"). Reasons for the consistency of risk-taking between situations have not been clearly determined but may include several common factors triggering risk-taking between situations. For example, personality, attitude toward the risk itself, and the benefits of taking a risk have been considered (e.g., Zukerman & Kuhlman, 2000; McKenna and Horswill, 2006; Haga et al., 1994). In other words, the background factors related to risk-taking are not limited to the specific characteristics of one situation. In Japan, the consistency between situations has been addressed in only three situations (daily life, traffic, and driving). Although Ueichi and Kusumi (1998) examined individual differences of risk-taking in several situations (e.g., gambling & sports) and suggested a relationship between personality factors and risk-taking in such situations, the consistency of risk-taking between situations was not tested. Therefore, the purpose of the present study is to test the consistency of risk-taking within a situation and between situations by setting up several situations.

METHOD

Participants and procedure

A questionnaire survey was administered to 197 undergraduate and graduate students (119 male, 77 female, and 1 unknown) from 22 to 26 January 2008 at Osaka University in Japan. The mean age was 21.05 (SD=2.46). All students voluntarily took part in the survey under conditions of anonymity. The questionnaire was distributed and collected on site during the university lectures.

Questionnaire

In order to develop items regarding risk-taking in daily life, 92 items were initially gathered for this study. They were developed by consulting previous findings regarding risk-taking. These items were then screened by a team made up of a professor, an assistant professor, and four graduate students who majored in psychology, in order to determine whether these items were adequate for use in this study. Thirty-nine items were eventually accepted and categorized into five situations (Traffic, Health, Financial, Social, and Crime prevention). Sample items included the following: "To ignore a red light as a pedestrian if cars are not coming" (Traffic), "To show concern about nutritional balance" (Health), "To lend money to a close friend" (Financial), "To play sick frequently" (Social), and "To lock the door when you pop out" (Crime prevention). The likelihood of engaging in the behaviors described was evaluated on a five-point scale, ranging from 1 (extremely unlikely) to 5 (extremely likely). Respondents also answered questions regarding demographic variables (age and gender).

RESULTS

Consistency within a situation

There were 176 valid responses. To test consistency within a situation, internal reliability coefficients were calculated for each of the five situations (Table 1). None of the coefficients were very high. In particular, the coefficient for Financial situation was low (α=.27). These findings did not necessarily support consistency within a situation.

Consistency between situations

To test consistency between situations, Haga et al. (1994) used the mean scores of the items based

Table 1. Consistency of risk taking within a situation

	Cronbach's alpha coefficient
Traffic	.54
Health	.50
Financial	.27
Social	.55
Crime prevention	.51

Table 2. Means and standard deviations for each situation

	M	*SD*
Traffic	2.92	0.55
Health	2.95	0.51
Financial	2.34	0.48
Social	2.52	0.46
Crime prevention	2.95	0.69

Table 3. Pearson correlation coefficients indicating the consistency of risk taking between situations

	Situation				
	(I)	(II)	(III)	(IV)	(V)
(I) Traffic	—	.12	.29***	.28***	.20**
(II) Health		—	.15*	.35***	.43***
(III) Financial			—	.44***	.24**
(IV) Social				—	.27**
(V) Crime prevention					—

*$p<.05$, **$p<.01$, ***$p<.001$.

on each situation, and suggested that people who took daily risks did so in traffic and driving situations. For the present study, the means of the items for each situation were also calculated, even though the alpha coefficients were not high. Table 2 lists the means of the items for each situation. The more frequently the risks were taken, the higher the scores were, based on reverse scoring. Items were evaluated by 5-point scale, so people tended to take moderate risks in all daily life situations, except in Financial situations, as shown in Table 2. Pearson's correlations between the means for the situations were calculated. Significantly high correlation coefficients between the means for situations indicated that people who took risks in one situation did so in other situations as well, which supports consistency between situations. Table 3 lists these values. The results indicated mostly significant positive correlations across situations, but the degree of the relations differed. Only three combinations (Health and Social, Social and Financial, and Health and Crime prevention) exhibited significant correlation coefficients (exceeding .30). Therefore, despite the suggestion of consistency between situations, whether a person who takes risks in one situation also does so in another situation depends on both situations.

Factor analysis

The above analyses could not fully explain the situational consistency of risk-taking, because the internal reliability coefficients (Table 1) on consistency within a situation were not high, and not all the consistency between situations could be explained based on several low correlation coefficients (Table 3). Therefore, another approach was needed to examine the situational consistency of risk-taking. If consistency within a situation truly exists, the sample items of factors extracted by factor analysis should be the same as those of the situation categories. If these factors do not correlate with each other, consistency between situations is not supported. In other words, risk-taking depends on the situation. Thus, factor analysis was conducted using principal-axis factoring and oblique rotation. A five-factor model was first specified based on the number of situations presented in this study. However, a three-factor model was easier to interpret by a scree plot. Table 4 presents the results of the factor analysis. Any item whose factor loading was below 0.25 or above 0.25 on multiple factors was removed from the table. The items assigned to Factor 1 were "To check carefully before you leave in case of fire or thieves," "To show concern about nutritional balance," and "To not carry large amounts of cash." Factor 1 was named "Tendency of avoiding risks." Factor 2 was constructed from the items "To ignore red lights as a pedestrian if cars are not coming," "To lend money to a close friend," and "To send E-mail by cell phone while walking." Since the behavior in these items can change according to time and circumstances, this factor was named "Tendency of engaging in behavior changed by circumstance." The items in Factor 3 included "To play sick frequently," "To break promises frequently," and "To take it easy and absent yourself from school or the office when feeling ill." Such behavior seems to be influenced by strong beliefs or values held by the individuals themselves; thus, Factor 3 was named "Tendency of engaging in belief-based behavior." The internal reliability co-

Table 4. Results of factor analysis

Items	Factor 1	Factor 2	Factor 3	Communality
Factor 1: Tendency of avoiding risks (α=.56)				
To check carefully before you leave in case of fire or thieves (C)	0.51	−0.06	−0.17	0.34
To buy insurance in case (H)	0.47	0.24	−0.05	0.24
To lock the door when you pop out (C)	0.42	−0.09	−0.05	0.21
To show concern about nutritional balance (H)	0.39	0.04	0.00	0.15
To try sleep even if you are very busy (H)	0.36	0.10	−0.07	0.14
To prevent illness by getting vaccinated when possible (H)	0.36	0.05	0.00	0.12
Not to carry large amounts of cash (F)	0.33	−0.10	−0.11	0.16
To sometimes fail to eat three times a day (H)	−0.32	0.21	0.03	0.18
To brush your teeth after eating (H)	0.31	0.04	−0.07	0.11
To make a backup copy of important data (S)	0.25	−0.08	−0.10	0.10
To take anti-disaster measures seriously (C)	0.25	−0.12	−0.05	0.10
To stay up late despite needing to get up early (S)	−0.25	0.10	0.23	0.16
Factor 2: Tendency of engaging in behaviors changed by circumstance (α=.60)				
To ignore a red light as a pedestrian if cars are not coming (T)	0.09	0.67	−0.15	0.41
To cross a street diagonally as a pedestrian (T)	0.09	0.51	0.09	0.27
To lend money to a close friend (F)	−0.03	0.40	0.12	0.21
To send E-mail by cell phone while walking (T)	0.00	0.39	0.17	0.21
To adhere to traffic laws regardless of traffic circumstances (T)	0.14	−0.33	−0.04	0.16
To drink too much alcohol despite being afraid of a hangover (H)	0.04	0.31	−0.01	0.09
To cross a railroad track while cross the crossing bar is going down (T)	0.08	0.27	−0.03	0.07
To eat out-of-date food (H)	−0.01	0.25	−0.03	0.06
To crib on an exam (S)	−0.18	0.25	0.01	0.11
Factor 3: Tendency of engaging in belief-based behaviors (α=.61)				
To play sick frequently (S)	0.04	0.06	0.58	0.35
To break promises frequently (S)	−0.17	−0.13	0.46	0.25
To take it easy and absent yourself from school or the office when feeling ill (H)	0.23	0.01	0.43	0.20
To talk to someone about a secret (S)	0.01	0.14	0.41	0.21
Not to make it at the set time (e.g., a layover) (S)	−0.21	−0.05	0.34	0.17
To buy on impulse (F)	0.05	0.22	0.31	0.17
To co-sign for a friend (F)	−0.08	−0.16	0.29	0.10
To use a cell phone in a prohibited area (e.g., Train) (T)	−0.07	0.06	0.28	0.11
To ride in the car of a drunk driver who is a reliable friend (T)	−0.07	0.14	0.28	0.13
To take an exam without studying (S)	−0.13	0.15	0.28	0.16
Factor correlation matrix				
Factor 1. Tendency of avoiding risk	—	−.21	−.17	
Factor 2. Tendency of engaging changed by circumstance		—	.23	
Factor 3. Tendency of engaging in belief-based behaviors			—	

Note: The greatest loadings in the three factors are denoted in bold. A correlation matrix contains the values before eliminating items. T=Traffic, H=Health, F=Financial, S=Social, and C=Crime prevention items.

efficients of the items for each factor improved, compared to those for each daily situation, as indicated in Table 4. Factor 1 was negatively correlated with Factor 2 and Factor 3, while Factor 2 was positively correlated with Factor 3, in spite of their low values. Therefore, three latent factors were suggested as background factors related to risk-taking in everyday life, and it is possible that the situational consistency of risk-taking depends on these three factors.

DISCUSSION

Situational consistency of risk-taking

The purpose of the present study was to examine the situational consistency of risk-taking. Results of the questionnaire survey did not support consistency within a situation, especially in the Financial situation. Consistency between situations was also largely supported, as in previous studies (Weber et al., 2002; Haga et al., 1994); however, it does not necessarily indicate that the person who takes risks in one situation will do so in another situation. Additionally, it is possible that situational consistency appears to occur because of the latent factors indicated by the present study. These results suggest that risk-taking does not depend on a specific situation. Until now, most previous studies about risk-taking have addressed behavior in only one situation. For example, risk-taking in a traffic situation (e.g., ignoring a red light) has been used to explain other forms of risk-taking, violations, or traffic accidents (Parker, Reason, Manstead, & Stradling, 1995; Iversen & Rundmo, 2002). The results of the present study may suggest that engaging in risk-taking in several situations as well as in traffic situation may help to explain such negative events. Personality variations inherent in human beings have been studied in an attempt to understand individual differences in risk-taking (e.g., Zuckerman & Kuhlman, 2000; Ueichi & Kusuimi, 1998). In the present study, factor analysis extracted three factors to describe the tendencies to engage in risk-taking behaviors. This suggests that these factors also include the effects of personality as indicated by previous studies. Thus, understanding what personalities and variables affect these factors might enable us to understand the mechanism and individual differences of risk-taking in greater detail because they explain the tendencies of risk-taking regardless of the specific situation. These factors are discussed in the following section.

Background factors

Factor analysis extracted three factors influencing situational consistency. Factor 1 is "Tendency of avoiding risk." This risk cannot necessarily be avoided even if the person intends to avoid it. For example, in spite of being concerned about keeping a nutritional balance to prevent illness, one cannot necessarily avoid becoming sick. Even if one carefully checks to make sure the door is locked before leaving, there is still a possibility of the house getting robbed. Therefore, a lower score of this factor suggests that one feels more reluctant to avoid risk. Factor 2 is "Tendency of engaging in behavior changed by circumstance." For example, the behavior of the item "To ignore red lights as a pedestrian if cars are not coming" may change based on whether there are cars or not. With "To lend money to a close friend," the behavior may also change according to the amount of money. Therefore, the higher the score a person obtains on this factor, the more susceptible that person is to the elements that promote risk-taking, such as the benefit of taking a risk or risk perception (e.g., McKenna & Horswill, 2006; Haga et al., 1994). Factor 3 is "Tendency of engaging in belief-based behavior." Behaviors related to this factor, such as "to play sick frequently" or "to break promises frequently," are likely to happen even if the circumstance varies, focusing on the word "frequently." Therefore, the higher the score on this factor, the more risks the person is likely to take, regardless of the circumstances. These three factors may be clues to understanding risk-taking; however, the validity of the factors should be examined.

Limitations and further study

Although this study focused on situational consistency and the latent factors involved, there were a few limitations. First, only undergraduate or graduate students were recruited. Further research should be conducted to include people from various backgrounds, in order to test the external validity of this study. A second limitation arises from our use of self-reports. For example, risky behaviors (e.g., risk-taking or violation) can be influenced by social desirability (Parker et al., 1995). Thus, in further studies, other approaches as well as the questionnaire method (experimental study or observational research) should be in-

troduced to test situational consistency. A final limitation is the definition of the situation. In the present study, only 39 behaviors related to risk-taking and five situations were used. Other situations and behaviors related to risk-taking should be considered. By addressing these limitations, the mechanisms of risk-taking may be more deeply understood.

REFERENCES

Byrnes, J. P., Miller, D. C., & Schafer, W. D. 1999 Gender Differences in Risk Taking: A Meta-Analysis. *Psychological Bulletin*, **125**(3), 367–383.

Haga, S., Akatsuka, H., Kusukami, K., & Kon-no, S. 1994 Factors of Risk-Taking Behavior: A Questionnaire Survey. *RTRI Report*, **8**(12), 19–22. (in Japanese)

Iversen, H. & Rundmo, T. 2002 Personality, risky driving and accident involvement among Norwegian drivers. *Personality and Individual Difference*, **33**, 1251–1263.

McKenna, F. P. & Horswill, S. M. 2006 Risk Taking from the Participant's Perspective: The Case of Driving and Accident Risk. *Health Psychology*, **25**, 163–170

Nakai, H. & Usui, S. 2006 An Examination of Consistency in Tending to Engage in Risk taking Behaviour while at the Wheel. *Japanese Journal of Applied Psychology*, **32**(1), 1–10. (in Japanese)

Parker, D., Reason, J. T., Manstead, A. S. R., & Stradling, S. G. 1995 Driving errors, driving violations and accident involvement. *Ergonomics*, **38**, 1036–1048.

Ueichi, H. & Kusumi, T. 1998 Effects of personality, cognitive, and situational variables on risk taking behavior. *The Japanese Journal of Psychology*, **69**(2), 81–88. (in Japanese)

Weber, E. U., Blais, A., & Betz, N. E. 2002 A Domain-specific Risk-attitude Scale: Measuring Risk Perceptions and Risk Behaviors. *Journal of Behavioral Decision Making*, **15**, 263–290.

Yoshida, S. 1995 Comparison of Driver Behavior at Intersections between Seat Belt Users and Non-users. *IATSS Review*, **21**(1), 38–46. (in Japanese)

Zuckerman, M. & Kuhlman, D. M. 2000 Personality and Risk-Taking: Common Biosocial Factors. *Journal of Personality*, **68**(6), 999–1029.