

Self-Function and Occurrence of Social Anxiety as an Adaptational Warning: Empirical Understanding of 'Seken'

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Abstract: This research aims at the empirical understanding of the distinctive Japanese mentality related to 'seken' and discusses 'self' functioning in an intrapersonal psychological process that is invoked in the social environment and social anxiety, which occurs as an adaptational warning. The study included 595 university students ($M=19.57$ years), and their self-function and social anxiety were measured. We found that the 'self-functions' were focused on their understanding and evaluation of 'seken.' The evaluation contents were fed back to 'I' indicating the early occurrence of anxiety as a warning. This research not only deepened the empirical understanding of 'seken' but also provided further implications on the adaptational meanings of self-function and social anxiety.

Keywords: Self-function, social anxiety, self-process, warning system, seken

The present study focuses on the functions of the 'self' and social anxiety as a warning in an intrapersonal psychological process in the social environment called 'seken.' The research questions of this study are 1) How does the 'self' function in such an intrapersonal psychological process?; and 2) When and how does the social anxiety occur in such psychological process? The analysis of these questions will provide useful implications on the roles of the self and social anxiety in a social adaptation of human beings.

Japanese Representation of 'Seken'

The Japanese expressions, 'seken' and 'yo-no-naka,' are frequently used in Japan and are collectively referred to as 'seken.' In English, 'seken' refers to 'the world' or 'a community' but do not necessarily articulate the actual meaning (Nakamura, 2011). These translated words indicate a group or a coherent unit with clear boundaries and specific qualities (e.g., Campbell, 1958; Crawford, Sherman & Hamilton, 2002; Hamilton, Sherman & Rodgers, 2004) that can distinguish it from the other groups (e.g., Hogg, 2012; Rubini, Moscatelli & Palmonari, 2007), such as specific countries, regions, ethnic groups, social classes, etc. 'Seken'

also includes groups consisting of homogeneous people similar to the concept of 'the world.' However, it does not clarify unique and distinctive qualities to be conceptualized as an active entity (Nakamura, 2011).

For example, the Japanese often use expressions such as "to be on a par with 'seken'" or "turn one's back on 'seken'" to explain the self-image or behavior in association with 'seken.' They consider 'seken' as one of the reference groups and can easily assume a figure that best suits 'seken' depending on the situation and its future behavior. In other words, the prototype of 'seken' (Rosch, 1975) set in the minds of the Japanese people indicates that they are aware of 'seken' in their everyday life and change their behavior according to 'seken' (Sato, 2001).

Nakamura (2011) indicated that the process in which 'seken' affects one's behavior begins when one considers the way others speak and behave to represent 'seken.' For example, in some cases, parents and friends can directly identify 'seken' while others observe the people they meet on a street or a train to analyze whether they complied with 'seken.' The Japanese often consider others as spokespersons of 'seken' and blend their behavior according to their own knowledge of 'seken.' However, empirical discussions on 'seken' are extremely rare even in the psychological research in Japan.

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The Self as an Agent

Since the research by James (1890), 'I' has been considered to form or transform 'me' through interactions with one's external environment. Baumeister (1999), who called this intrapersonal experience as "reflective consciousness," stated that 'I' developed an adaptive relationship between 'me' and one's external environment. However, the 'self' is widely accepted as an "agent (Baumeister, 1999)/agency (Berkowitz, 1988)" of 'I' that realizes an intrapersonal psychological process in which social behavior is motivated through interactions between the object, 'me,' and one's environment (Shimotomai, 2008). Psychological research on the 'self' considers 'self' functions as an agent in an intrapersonal psychological process (Berkowitz, 1988). Thus, accordingly, Berkowitz (1988) categorized the functions of 'self' as "the self as known" in self-concept research and "self-motives" related to regulatory characteristics of social behavior. Baumeister (1999) further classified 'self' functions into "interpersonal being" and "executive function" in addition to "reflective consciousness." The functions of 'self' are not uniform; hence, it should be classified into several types (Baumeister, 1988, 1999). Since the 'self' is an agent of 'I,' its functions should be organized in a temporal sequence in accordance with one's intrapersonal psychological process as 'I' goes through it.

Influence Processes of 'Seken' and Self-Function

Nakamura (1990) considered that a temporal sequence of several phenomena in an intrapersonal framework must occur until the expression of one's social behavior. Accordingly, he hypothesized several stages in an intrapersonal psychological process where 'me' was focused, understood, evaluated, and consequently expressed by 'I.' Its validity is described through a meta-analysis of research findings. Each step is referred to as a 'phase' because it characteristically consists of a temporal sequence, and this individual phenomenal psychological process is referred to as 'self-process.'

'Self-process' is a useful theoretical framework in which 'seken' affects the behavior of the Japanese. It refers to a phase in which the 'self' focuses on 'seken'

represented by others; thus, acting as a filter to restrict information inputs (Gnjatović, Janev, & Delić, 2012) and an entrance for the management of information of 'seken' (Macrae, Bodenhausen, Milne & Calvini, 1999). This phase is considered as a stage in which attention and awareness occur in the level of perceptive senses based on the cranial nerve mechanisms (De Brigard & Prinz, 2010).

If the 'self' focuses on a characteristic of 'seken,' it becomes easier to recall the associated prototypical exemplars (Ashby & Maddox, 2005; Larochelle & Pineau, 1994) and understand the quality and relevance of the prototype (Leonardelli & Toh, 2015). In the second phase of understanding, activities such as gathering information about 'seken' and searching for information related to semantic memories from long-term memories (Schwarz, Hassebrauck & Dorfler, 2010) are assumed to be vitalized.

This helps to evaluate whether the 'seken' prototype is consistent/inconsistent (Shimotomai, 1990) or similar/dissimilar to 'me.' In the third phase, 'seken' is assumed to be evaluated. The cognitive consistency theory (e.g., Heider, 1958) has indicated that subjects with consistent qualities evoke attraction. Whereas, the self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) hypothesized that depersonalized social attraction occurs when 'seken' becomes an in-group, and its prototype and 'me' are evaluated to be similar (Hogg & Hains, 1998). If 'me' is regarded as a member of an in-group, 'seken' would be evaluated to be attractive while dissimilar subjects would evoke a strong aversion (Chen & Kenrick, 2002). In the evaluation phase, when one considers that he/she has a 'seken' membership but realizes that it is a prototype that is inconsistent with and dissimilar to 'me,' it would evoke aversion.

Finally, in the last stage, i.e., the feedback (FB) phase, the 'self' is assumed to motivate 'I' to take an action based on the evaluated results, which act as the feedback for 'I.' In this phase, if one finds that 'seken' is coherent and consistent with and similar to 'me,' he/she would feel accepted by and included in 'seken' in-group. However, the non-prototypical 'me' is regarded to be isolated from 'seken' due to its inconsistency or

dissimilarity. When these results are fed back, 'I' could be motivated to take action. The social acceptance can fulfill the fundamental human needs, such as belonging, control, self-esteem, and meaningful existence (Williams & Zadro, 2005). In contrast, isolation is the state in which such needs are threatened, motivating the prevention of threats and promoting relationships with others (Molden, Lee & Higgins, 2008). In addition, Baumeister, Dale and Sommer (1998) indicated that healthy people are also motivated to act against the daily threats to self-esteem according to their defense mechanism.

The following four phases were hypothesized in an intrapersonal psychological process that invoked in 'seken': (1) the 'self focus on 'seken,' (2) the 'self understanding of 'seken,' (3) the 'self evaluation of 'seken' in conformation with 'me,' and (4) the 'self feeds back the results that explain the current status of 'me' in comparison with 'seken.' However, these phases represent functions of the 'self.' Therefore, one of the purposes of this research is to propose a model for self-function.

Social Anxiety as a Warning

The sociometer theory (Leary, 2010; Leary & Baumeister, 2000) considered social anxiety as a warning to alert one for the possibility of one's value as a partner for the relationship development ("relational value," Leary, 2001, 2005), which seems to have deteriorated (Buckley, Winkel & Leary, 2004; Leary, 2010; Parkinson & Simons, 2012). The threat to one's relational value is the central characteristic of all social exclusion episodes, such as ostracism, rejection, etc. (Leary, 2005). The social exclusion studies indicated that strong emotional responses, such as anxiety, sadness, anger, etc., occurred immediately after the exclusion (Buckley et al, 2004; Vohs & Schmeichel, 2003; Zadro, Boland & Richardson, 2006). However, anxiety reflects the anticipation of occurrences of the negative events in the future (Mineka, Watson & Clark, 1998; Pomerantz & Rose, 2014). The studies also considered social anxiety as a warning for the current and future threats to the excluded people (Baumeister & Tice, 1990).

People feel this warning after they could realize and

describe their circumstances and threats in words. However, since social exclusion affects the cranial nerve mechanisms (Eisenberger, Lieberman & Williams, 2003), there is a possibility that "automatic affect" (Stillman & Baumeister, 2010; Baumeister & Lobbstaël, 2011) may occur not only after verbalization but also prior to it. In contrary, an evocation of anxiety could make 'I' realize the threats. Social anxiety may be a warning for an adaptational crisis that may occur not only after the feedback of evaluation results but also in the prior phases. Thus, we set the second purpose of the research for discussing the phase in which social anxiety occurs.

Therefore, we hypothesized that the functions of the 'self' have a temporal sequence in focusing, understanding, evaluating, and feeding back, and that anxiety could occur before the verbalization in the FB phase. This research also aims at empirically understanding the distinctive Japanese mentality related to 'seken' and obtain useful implications for discussing the roles of the 'self' and social anxiety for adaptation.

Method

Participants

We enrolled 606 university students from four private universities in Tokyo, Saitama and Kanagawa Prefecture. Eleven participants did not respond and were excluded from the study. Hence, 595 participants (70 males, $M=19.67$ years, and 525 females, $M=19.56$ years) with a mean age $M=19.57$ years were included in this study. All the participants were native Japanese speakers and nationals and resided in the urban area of the current Metropolitan city. In addition, 87.39% of the targets (520 participants) lived with their families, and many of them belonged to clubs or circle groups and/or part-time work groups (67.10% and 77.00%, respectively).

Procedure

The questionnaire sheets were composed of the following scales in the given order.

Demographic sheet

In the introductory sheet, the participants were

asked to indicate their gender, age, grade, current residence status (whether they lived independently or with parents), whether they belonged to any club or circle groups, and whether they have any part-time jobs or not.

Self-function scale

The scale items were collected to measure self-function in four phases. For the focusing, understanding, and evaluating phases, the following items were selected: Eight items from the self-consciousness scale (Fenigstein, Scheier & Buss, 1975) ; eight items from the self-reflection and insight scale (Grant, Franklin & Langford, 2002) ; two items from the self-focused attention scale (SFAS, Kiropoulos & Klimidis, 2006) ; three items from the rumination reflection questionnaire (Trapnell & Campbell, 1999) ; six items from the Rosenberg self-esteem scale; and one item from the self-affirmation scale (Tanaka, 2011). For the following scales, the Japanese versions were referenced: Sugawara (1984) for the self-consciousness scale, Nakajima and Tanno (2014) for the self-reflection and insight scale, Takano and Tanno (2008) for the rumination-reflection questionnaire, and Mimura and Griffiths (2007) for the self-esteem scale. For the non-Japanese items, the author translated them into Japanese that were again translated into English by a bilingual linguist, and the author confirmed both the Japanese and English versions. For these 28 items, an additional 8 items were established as follows: "I am concerned about 'yo-no-naka' and 'seken';" "I always pay attention to 'yo-no-naka' and 'seken';" "I constantly remind myself to not forget to pay attention to 'yo-no-naka' and 'seken';" "I try to understand the status of 'yo-no-naka' and 'seken';" "I want to always know how 'yo-no-naka' and 'seken' are;" "I think that 'yo-no-naka' and 'seken' are good;" "I regard 'yo-no-naka' and 'seken' favorably;" and "I think 'yo-no-naka' and 'seken' are desirable." The focusing, understanding, and evaluation phases included 11, 14, and 11 items, respectively. The FB phase at the end referred to 26 items from Kazama, Shimotomai, Hida and Tsunoo (2011) that measured the ways of viewing events in which the Japanese people realized inconsistency between 'me' and 'seken.'

We referred to all of these 62 items by replacing all

objects used in the sentences with 'seken' and 'yo-no-naka.' By randomizing the presentation order of these items, the participants were asked to respond to a seven-level Likert scale with a range from 1 ("extremely disagree") to 7 ("extremely agree").

Spokespersons of 'Seken'

The participants were asked to answer the all persons multiply from the following categories to understand who represents 'seken' in their daily life: the people they directly interacted with, such as parents, brothers and sisters, friends, etc; people they indirectly encountered, such as entertainers, athletes, characters in novels or television shows or fictitious persons; citizens or municipal residents; and people described by national or regional laws, ethics or morals.

Social Anxiety Scale

Watson and Friend (1969) developed the social avoidance and distress scale (SADS) to measure social anxiety and behavior to avoid the social settings. This research referred to 28 items of the Japanese version of SADS (Ishikawa, Sasaki & Hukui, 1992) and asked the participants to respond to a seven-level Likert scale with a range from 1 ("extremely disagree") to 7 ("extremely agree").

The questionnaire sheets were distributed to the participants who received prior instructions on how to respond to the questionnaire; they were allowed to give their responses without being restricted to a certain time limit.

Results

Frequency of Assumption Making on 'Seken'

Spokespersons

We allowed the participants to select multiple choice answers about the spokespersons of 'seken' in their everyday life; the results are shown in Table 1. In many cases, the participants selected the members of social categories as the 'seken' spokespersons, followed by those who belong to the country/municipalities/ethnic groups and then those who were described in laws, ethics or morals. However, the frequency rates to select residential neighbors, persons with whom they happen to encounter, parents and spouses were also comparative. In addition, the rate for fictitious persons

Table 1. Frequency of assumption making on 'Seken' spokespersons ($N=595$)

| Spokespersons | Real number | % |
|---|-------------|--------|
| Citizens / Residents of municipalities / ethnic groups | 480 | 80.672 |
| Figures described in regulations / laws / morals / ethics | 342 | 57.479 |
| Neighboring residents | 330 | 55.462 |
| Co-workers of part-time jobs / full-time jobs | 308 | 51.765 |
| Persons in departments / classes | 290 | 48.739 |
| Friends / best friends | 274 | 46.050 |
| People who appear in the media | 266 | 44.706 |
| Persons in clubs / circles | 246 | 41.345 |
| People who interact on social networks | 236 | 39.664 |
| School staffs | 227 | 38.151 |
| People who just happen to be there | 215 | 36.134 |
| Parents | 173 | 29.076 |
| Relatives | 170 | 28.571 |
| Entertainers / actors | 144 | 24.202 |
| People who gather in bulletin board sites | 144 | 24.202 |
| Brothers and sisters | 125 | 21.101 |
| Lovers / one-sided lovers | 113 | 18.992 |
| Athletes and their team members | 91 | 15.294 |
| Spouses | 77 | 12.941 |
| Fictitious people in novels and comic books | 34 | 5.714 |

was a little over 5%, indicating that the participants were aware of 'seken' in many scenes of their everyday life.

Consideration of Self-Function in Intrapersonal Processes

We considered a self-function measurement scale structure for each phase to clarify how the 'self' functions in each of the phases.

Focusing Phase

The exploratory factor analysis applied the maximum likelihood estimation (promax rotation), and two factors consisting of seven and four items were extracted. Subsequently, the confirmatory factor analysis was performed by setting these two factors for latent variables, and each item for the observable variables confirmed a low goodness of fit with the data ($CMIN = 301.733$, $df = 43$, $p < 0.001$; $GFI = 0.911$, $AGFI = 0.863$, $CFI = 0.913$, $RMSEA = 0.101$). Attempts to improve the

goodness of fit by excluding the observable variables with low standardized estimates resulted in an extremely satisfactory fitness, with a two-factor structure consisting of four and three items as shown in Table 2 ($CMIN = 12.533$, $df = 11$, $p = 0.325$; $GFI = 0.994$, $AGFI = 0.985$, $CFI = 0.999$, $RMSEA = 0.015$). These two factors were named "attention" and "consciousness" because each of the item groups measured the level of attention and nuance of conscious manifestation. Therefore, the mean rating values of the items that make up each factor were calculated and categorized as attention and consciousness scores.

Understanding Phase

In this phase, two factors with seven items each were extracted. Subsequently, confirmatory factor analysis was performed, which confirmed a low goodness of fit with the data ($CMIN = 542.371$, $df = 76$, $p < 0.001$; $GFI = 0.894$, $AGFI = 0.853$, $CFI = 0.884$, $RMSEA = 0.102$). The goodness of fit was achieved with a two-factor

Table 2. Standardized coefficients in the results of confirmatory factor analysis on self-function

| Phase Self-function | Item | Standardized coefficients |
|---------------------|--|---------------------------|
| Focusing | I am usually aware of 'seken' and 'yo-no-naka.' | 0.818 |
| Consciousness | I am concerned about 'yo-no-naka' and 'seken.' | 0.809 |
| | Generally, I am not very aware of 'seken' and 'yo-no-naka.' (Reverse item) | 0.661 |
| Attention | I always pay attention to 'yo-no-naka' and 'seken.' | 0.813 |
| | I am generally attentive to 'seken' and 'yo-no-naka.' | 0.760 |
| | I constantly remind myself not to forget to pay attention to 'yo-no-naka' and 'seken.' | 0.694 |
| | I am alert to the changes in 'seken' and 'yo-no-naka.' | 0.664 |
| Understanding | I am always trying to figure out 'seken' and 'yo-no-naka.' | 0.802 |
| Observation | I love exploring 'seken' and 'yo-no-naka.' | 0.768 |
| | I want to always know how 'yo-no-naka' and 'seken' are. | 0.692 |
| Consideration | I have a definite need to understand 'seken' and 'yo-no-naka.' | 0.817 |
| | I reflect a lot about 'seken' and 'yo-no-naka.' | 0.770 |
| | I am often absorbed by thinking about 'seken' and 'yo-no-naka.' | 0.735 |
| | I love to meditate on the nature and meaning of 'seken' and 'yo-no-naka.' | 0.678 |
| Evaluation | I regard 'yo-no-naka' and 'seken' favorably. | 0.874 |
| Favor | I think that 'yo-no-naka' and 'seken' are good. | 0.688 |
| | I feel that 'seken' and 'yo-no-naka' have a number of good qualities. | 0.642 |
| Aversion | I cannot make myself like 'seken' and 'yo-no-naka.' | 0.942 |
| | At times, I think 'seken' and 'yo-no-naka' are no good at all. | 0.458 |
| FB | I sometimes feel that I am seen as a difficult person to talk to by the people in 'seken' and 'yo-no-naka.' | 0.846 |
| Isolation | I sometimes feel that people in 'seken' and 'yo-no-naka' dislike me. | 0.834 |
| | I sometimes notice that I fail to be a member of 'seken' and 'yo-no-naka.' | 0.788 |
| | I sometimes feel set apart from 'seken' and 'yo-no-naka.' | 0.773 |
| | I sometimes feel rejected from 'seken' and 'yo-no-naka.' | 0.718 |
| | I sometimes feel that people in 'seken' and 'yo-no-naka' set a distance from me in their minds. | 0.665 |
| Acceptance | I sometimes feel that I am seen as an easy person to talk to by the people in 'seken' and 'yo-no-naka.' | 0.858 |
| | I sometimes feel accepted from 'seken' and 'yo-no-naka.' | 0.753 |
| | I sometimes feel it is easy to talk to people in 'seken' and 'yo-no-naka.' | 0.590 |
| | I sometimes feel favorable towards 'seken' and 'yo-no-naka.' | 0.541 |
| Secession | I sometimes feel that I do not have to ask 'seken' and 'yo-no-naka' to understand my thinking and behavior. | 0.759 |
| | I sometimes think that I do not care if my thinking and behavior are not appropriate for 'seken' and 'yo-no-naka.' | 0.748 |
| | I sometimes feel that I do not have to adjust my thinking and behavior to accord with the thinking and behavior in 'seken' and 'yo-no-naka.' | 0.657 |

Note: FB, feedback

Table 3. Standardized coefficients in the results of confirmatory factor analysis on SADS

| Items | Standardized coefficients |
|---|---------------------------|
| Interpersonal fear | |
| I tend to withdraw from people. | 0.758 |
| I am seldom at ease in a large group of people. | 0.714 |
| I am usually nervous with people unless I know them well. | 0.681 |
| Being introduced to people makes me tense and nervous. | 0.650 |
| I would avoid walking up to and joining a large group of people. | 0.598 |
| Interpersonal strain | |
| It is easy for me to relax when I am with strangers. (Reverse item) | 0.825 |
| I feel relaxed even in unfamiliar social situations. (Reverse item) | 0.762 |
| Avoidance | |
| I try to avoid formal social occasions. | 0.741 |
| I often think up excuses in order to avoid social engagements. | 0.619 |
| I try to avoid situations which force me to be very sociable. | 0.511 |

structure consisting of three and four items as shown in Table 2 (CMIN = 10.973, $df=9$, $p=0.278$; GFI = 0.995, AGFI = 0.984, CFI = 0.999, RMSEA = 0.019). These two factors were named “observation” and “consideration” because the item groups measured a trial state for understanding, leading to a state of deeper thinking. Therefore, the mean rating values of the items were categorized as observation and consideration scores.

Evaluation Phase

Here, two factors consisting of seven and four items were extracted. Subsequently, the confirmatory factor analysis was performed, which confirmed a low goodness of fit with the data (CMIN = 282.191, $df=43$, $p < 0.001$; GFI = 0.916, AGFI = 0.871, CFI = 0.886, RMSEA = 0.097). The goodness of fit was improved and that provided a two-factor structure consisting of three and two items, resulting in the highest fitness as shown in Table 2 (CMIN = 5.837, $df=3$, $p=0.120$; GFI = 0.996, AGFI = 0.981, CFI = 0.997, RMSEA = 0.040). These two factors were named “favor” and “aversion” because they were interpreted to reflect evaluation of favor towards ‘seken.’ Therefore, the mean rating values of the items were categorized as favor and aversion scores.

FB Phase

Here, three factors consisting of six, eleven, and nine items were extracted. Therefore, based on these results, the items that showed a factor load of more than 0.600 and also had a low load for other factors were selected. The confirmatory factor analysis was performed for a total of 13 items that consisted of four, six, and three items by setting three factors for the latent variables and each item for observable variables. This analysis confirmed a low goodness of fit (CMIN = 270.023, $df=62$, $p < 0.001$; GFI = 0.933, AGFI = 0.902, CFI = 0.940, RMSEA = 0.075). The degree of conformance was improved by excluding the observable variables with low standardized estimates that provided a three-factor structure, resulting in an extremely high fitness as shown in Table 2 (CMIN = 65.702, $df=55$, $p=0.153$; GFI = 0.984, AGFI = 0.973, CFI = 0.997, RMSEA = 0.018). These three factors were interpreted as “acceptance,” “isolation,” and “separation” from the reference (hereinafter referred to as “secession”) based on which the mean rating values of the items were calculated and categorized as acceptance, isolation, and secession scores.

Table 4. Mean values and standard deviation of the subscale scores

| Phase | Subscale | N | Mean | SD |
|----------------|----------------------|-----|-------|-------|
| Focusing | Attention | 595 | 3.827 | 1.088 |
| | Consciousness | 595 | 4.357 | 1.095 |
| Understanding | Consideration | 595 | 3.304 | 1.317 |
| | Observation | 595 | 4.214 | 1.121 |
| Evaluation | Favor | 595 | 4.059 | 1.002 |
| | Aversion | 595 | 3.966 | 1.170 |
| | Acceptance | 595 | 3.608 | 0.966 |
| FB | Isolation | 595 | 3.797 | 1.369 |
| | Secession | 595 | 3.887 | 1.208 |
| Social anxiety | Interpersonal fear | 595 | 4.380 | 1.137 |
| | Interpersonal strain | 595 | 4.665 | 1.196 |
| | Avoidance | 595 | 4.145 | 1.092 |

Note: FB, feedback

Structure of Social Anxiety

Ishikawa et al. (1992) reported a single-factor structure of SADS through principal component analysis, which was performed in our study for the confirmation of the scale structure. As a result, the first principal component was confirmed to have the highest sum of squares of loads of 36.883, and many items of the second and third components had high loads similar to the loads of the first principal component. Since many items had multiple meanings, the exploratory factor analysis applying the maximum likelihood estimation for investigation of the multi-factor structure confirmed an initial eigen values of 1.0 or more for three factors. Therefore, the items with low communality in the three-factor structure were excluded, and confirmatory factor analysis for the 17 items was performed for the investigation of the goodness of fit of the three-factor structure model. As a result, a sufficient fitness value was not confirmed (CMIN = 317.626, $df = 108$, $p < 0.001$; GFI = 0.941, AGFI = 0.916, CFI = 0.954, RMSEA = 0.057). Hence, we improved the goodness of fit and confirmed that the three-factor structure had an extremely high fitness as shown in Table 3 (CMIN = 28.417, $df = 30$, $p = 0.548$; GFI = 0.991, AGFI = 0.983, CFI = 0.999, RMSEA = 0.000). Since these three factors can be interpreted as interpersonal hypersensitivity or social withdrawal, unrelaxability, and avoidance of inter-

personal contacts in order, they were named “interpersonal fear,” “interpersonal strain,” and “avoidance,” as shown in Table 3. The mean rating values of the items of each factor were considered as subscale scores.

Table 4 shows the descriptive statistics for each phase and subscale scores related to social anxiety.

Self-Function Model in an Intrapersonal Psychological Process

In this study, an intrapersonal psychological process is hypothesized to consist four phases in a temporal sequence. To confirm the validity of this hypothesis, we performed covariance structure analysis for a model that sets four phases for the latent variables and subscale scores for each phase for the observable variables. The goodness of fit provided the highest fitness of the model with the data shown in Figure 1 (CMIN = 10.882, $df = 11$, $p = 0.453$; GFI = 0.996, AGFI = 0.985, CFI = 0.999, RMSEA = 0.000). The four phases formed a recursive model with a temporal sequence, in support with the hypothesis.

Occurrence Factors for Social Anxiety

In order to investigate the phase in which social anxiety occurs and the kind of manifestation of self-function that causes social anxiety, influence of other variables must be controlled for the application of a

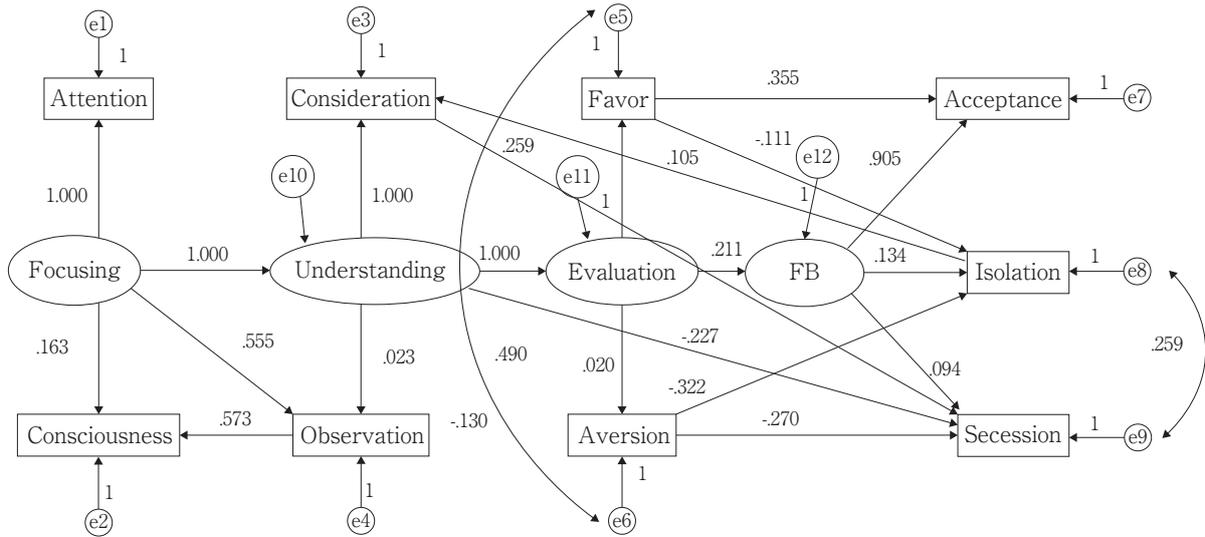


Figure 1. The result of covariance structure analysis for self-function model

Table 5. Results of multivariate regression analysis on social anxiety (standardized coefficients)

| Phase | Social anxiety | | | |
|---------------|----------------|--------------------|----------------------|------------|
| | Self-function | Interpersonal fear | Interpersonal strain | Avoidance |
| Focusing | Attention | n.s. | n.s. | n.s. |
| | Consciousness | n.s. | n.s. | n.s. |
| Understanding | Consideration | n.s. | n.s. | n.s. |
| | Observation | n.s. | n.s. | -0.129 *** |
| Evaluation | Favor | -0.145 *** | -0.185 *** | -0.140 *** |
| | Aversion | n.s. | n.s. | n.s. |
| FB | Acceptance | -0.074 * | -0.087 * | n.s. |
| | Isolation | 0.332 *** | 0.251 *** | 0.285 *** |
| | Secession | -0.077 * | n.s. | n.s. |

*: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$; FB, feedback; n.s., not significant

recursive model. Therefore, we performed a multivariate regression analysis by setting the three variables of social anxiety for criterion variables and all variables of self-function in four phases for the explanatory variables. The precision of this analysis was confirmed to be high (CMIN = 34.061, $df = 25$, $p = 0.107$; GFI = 0.991, AGFI = 0.970, CFI = 0.996, RMSEA = 0.025). The standardized coefficients of the path that confirmed significant influence relation are summarized in Table 5. In general, Table 5 shows the strong association of self-function in the FB phase with occurrences of social anxiety. However, it was confirmed that the favor could regulate all of the interpersonal fear, interpersonal-

al strain, and avoidance; and observation was also found to affect avoidance. As per the hypothesis assumed, it was indicated that social anxiety occurs in the understanding and evaluation phase.

In addition, although favor and aversion can be considered as bipolar, only favor regulated social anxiety. In order to obtain necessary information for the consideration of these results, we divided the participants into two groups based on whether the person showed the mean value or above, or less than the mean value for each of the point categories, such as interpersonal fear and strain, and avoidance. The Pearson product-moment correlation coefficients were calculated be-

tween the favor and aversion scores for each group. We found the correlations for all of the groups with high ($r = -0.479, p < 0.001$) and low scores ($r = -0.388, p < 0.001$) for interpersonal fear; the groups with high ($r = -0.477, p < 0.001$) and low scores ($r = -0.413, p < 0.001$) for interpersonal strain; and the groups with high ($r = -0.437, p < 0.001$) and low scores ($r = -0.470, p < 0.001$) for avoidance, which confirmed that favor and aversion are conceptually bipolar.

Discussion

What does 'Seken' mean to the Japanese people?

Many participants selected social categories, such as the country, municipalities, and ethnic groups as the spokespersons of 'seken.' This may be because they considered distinctive qualities of 'seken' (Hogg, 2012) from a depersonalized and homogenetic prototype based on an in-group that consisted of these social categories. These categories are, a priori, so distinctive that people acknowledge a strong common fate (Campbell, 1958) of the categorized in-group. However, for the vast majority of Japanese people, 'seken' acts as an inclusive category. Nevertheless, 'seken' was recognized through a wide variety of spokespersons from descriptions of laws and regulations to neighboring residents and co-workers. This suggests that 'seken' not only affects the Japanese in limited settings but widely affects them in various scenes of their everyday life, which is consistent with the notion of Nakamura (2011).

The Japanese do not form an in-group by selecting categories among social categories (such as nations, religions, etc.) that have pre-assumable distinctive qualities. They recognize 'seken' as an in-group through information about the qualities of 'seken' learned from various spokespersons, such as the country or friends, in accordance with time and circumstances. In addition, since the spokespersons are not limited, 'seken' can widely regulate the Japanese behavior throughout their everyday life. It is thus appropriate to describe that the Japanese have a kind of mentality incomparable to other cultures. However, 'seken' serves in the same way as the phenomena that are perceived in the inter-

nal world of individuals who belong to an in-group (Rogers, 1958), which can provide a reference frame for their behavior compared to other cultures.

Influence Processes of 'Seken' and the Self-Function Model

We hypothesized that the series of four phases in an intrapersonal psychological process is an influence process in which 'seken' motivates the behavior of the Japanese people. This hypothesis was based on an indication that 'seken' can be transmitted to 'I,' impacting one's motivation through temporal sequence phases that starts with the spokespersons of 'seken' and then focuses on 'seken.' However, the psychological process that motivates human behavior does not solely occur through influences of 'seken' but also by the wider environment. For example, Freud (1990) hypothesized that the 'ego,' instead of calling it as the 'self,' functions as an interface between the 'super ego' and the 'id.' Rogers (1959) also considered that 'I' modified 'me' for self-realization in the world of internal phenomena. Thus, we can consider 'I' as the subject, 'me' as the object, and 'self' as an interface with the external environment in the world of internal phenomena that motivates human behavior. Thus, the results of this research can provide a framework for the understanding of a psychological process that motivates one's behavior. Each phase represents functions of the 'self.' The results provide an approach for the empirical discussions on the roles played by the 'self,' association of environment with 'I' and 'me' through 'self,' and behavioral motivation by the 'self' in the world of internal phenomenon of human beings. On the other hand, since these functions can cause functional failure and errors, they may cause problems for the internal and external adaptation of human beings. Hence, the results of this research provide useful material to discuss the various problems related to human adaptation.

In addition, the self-function model shown in Figure 1 confirmed that the phases considered as latent variables according to the hypothesis are unidirectional. Whereas relationships among functions of the 'self' indicated paths through which isolation and secession in the FB phase evoked consideration of two prior phases.

Aversion determines observation of one prior phase, and observation determines consciousness of one prior phase. If 'T' knows the adaptation status of 'me' as acceptance, the 'self' completes its functions based on such notion that is fed back as acceptance in the FB phase and stops functioning. In contrast, isolation is a clear notion that is fed back to indicate a non-adaptation state. Secession also indicates the condition in which one isolates 'me' from 'seken' in recognition, and one's emotion continues to exist without being resolved even though one ignores or denies it, which is close to the denial in a defense mechanism. For example, "New Look Psychology" (e.g., Bruner & Postman, 1947) has indicated that perceptions/senses that are basic and fundamental are retroactively affected by recognition and desire. The findings of this research can be said to clarify the nature of self-function that is a continuous cycle through returns to the prior phase in an intrapersonal psychological process unless acceptance is fed back. Thus, when we discuss self-function in a phase at a given point, it is necessary to consider self-function in the prior phase even when it is a given condition.

Meanings of Social Anxiety in Adaptation

Social anxiety is a warning for threats to the basic needs and non-adaptation state of human beings (Leary, 2010). This research hypothesized that social anxiety occurs before the 'self' feeds back to 'T' based on the data, which indicated that social anxiety not only occurs in the FB phase but also in prior phases, such as the evaluation and understanding phases. Schachter (1964) proposed the two-factor theory for emotion in which emotions are experienced when one goes through a stage of physiological changes. In the recent years, cranial nerve mechanisms have been reported to be directly affected by social exclusion (Eisenberger et al, 2003). These studies indicate that the focusing phase can include precursory conditions, which might evoke anxiety in its composition. Lazarus and Folkman (1984) proposed that a stress recognition model has two separate cognitive evaluation stages, such as primary and secondary. They considered that although the primary evaluation is not in the level for

verbalization, the secondary evaluation forms a linguistic judgment for the first time based on the past experiences and existing knowledge. Thus, anxiety occurs in the understanding and evaluation phases prior to the FB phase as indicated by this research, assuming that the prior evaluation corresponds to the understanding phase and the secondary evaluation corresponds to the evaluation and FB phases. This result can testify the theory of "automatic affect" (Stillman & Baumeister, 2010; Baumeister & Lobbestael, 2011).

Our results on the understanding phase indicated that observation imposes negative influences only on the avoidance. Cognitive dissonance evokes avoidance responses (Festinger, 1957). This research confirmed that regression occurs in avoidance behavior, such as interpersonal fear and strain, and not in emotions. This result seems to be consistent with the human tendency mentioned above to prioritize avoidance. While social anxiety has an adaptational meaning as a warning for threats, if one avoids contacts with others, one is liable to cause wrong responses (victimization, Boivin & Hymel, 1997) or rejection (Bowker, Bukowski, Zargarpour & Hoza, 1998) from the people around him or her, leading to the state of serious insufficiency of the basic needs of human beings. Thus, for the non-avoidance of social settings or close psychological relationship, one must have some means for observing the situation on a primary basis.

The results related to the evaluation phase indicated that, although favor and aversion were confirmed to have a negative relation and were conceptually bipolar, favor was confirmed to be a strong determinant for social anxiety while aversion had no significant influence in relation to social anxiety. This research found that whether or not to favor 'seken' is in a sense a "switch" of a warning while occurrences of anxiety as a warning were not related to aversion. Trivers (1971) discussed that favor is an evaluation necessary for the development of a reciprocal relationship by becoming altruistic for the subject. Favor is regarded as important for the maintenance of reciprocal altruism with 'seken.' However, this point has been least discussed in the research. Overemphasis on favor needs to be further discussed.

In the FB phase, acceptance was confirmed to be a weak determinant for the interpersonal fear and awe while isolation was confirmed to cause strong social anxiety. This provides a deep insight into the results stating that the realization of isolation motivated one's avoidance behavior. Menzer, Oh, McDonald, Rubin and Dashiell-Aje (2010) indicated that isolation could further cause social exclusion mediated by rejection from peers and other factors. This result suggests that such situations could force one to further put up with a poor interpersonal environment; thus, presenting an important discussion theme for the realization of social adaptation.

Constraints of Generalization of the Results and Future Issues

Early occurrences of social anxiety was considered as an adaptational warning prior to the interpretation of environment and transmission of the interpretation to 'I.' This research played a vital role in providing an analytical perspective of the 'self,' indicating a mechanism that causes social anxiety as a warning by the self-function model, which is considered necessary for human adaptation.

However, it is not clear if there is any possibility of generalizing the results of this research to cover the non-Japanese people and also a wide social environment that is not limited to 'seken.' In addition, the samples of this research consisted of Japanese people who lived in urban areas and were aged in their 20s; the female participation was significantly more than the males. Therefore, this research cannot confirm influences from a wider age range and also from local characteristics, such as cultures and climates. It also lacks a gender balance among the participants that needs to be improved. Based on the findings of this research, we recognized these problems as restrictions that should be considered as research issues for future studies.

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