



The difference in foresight using the scanning method between experts and non-experts



Hidehito Honda ^{a,*}, Yuichi Washida ^b, Akihito Sudo ^c, Yuichiro Wajima ^d, Keigo Awata ^e, Kazuhiro Ueda ^{a,*}

^a Graduate School of Arts and Sciences, The University of Tokyo, Japan

^b Graduate School of Commerce and Management, Hitotsubashi University, Japan

^c Institute of Industrial Science, The University of Tokyo, Japan

^d Interfaculty Initiative in Information Studies, The University of Tokyo, Japan

^e Future Design Lab, The Japan Research Institute, Ltd., Japan

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ABSTRACT

We examined the factors that produce differences in generating scenarios on the near future using the scanning method. Participants were asked to briefly read (scan) 151 articles about new technology, the latest customs, fashion, social change, value system transition, or emerging social problems, and then to generate three scenarios about the near future based on the articles. We compared the generated scenarios between scanning method experts and non-experts with no prior experience with the scanning method. We found that experts generated more unique scenarios than non-experts did, and that experts and non-experts differed in the diversity of articles referenced when generating scenarios. We discuss the relationship between the present findings and previous findings on divergent thinking.

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1. Introduction

Although prediction of the future is highly important in product manufacturing or service provision, it is a highly difficult task. How, then, can people make insightful projections about the future? In the present study, we discussed one support method for thinking about the near future, the *scanning method*, and examined factors that produce differences in the projection of the future.

The scanning method is a support method for thinking about the near future. In the scanning method, one tries to generate scenarios (*foresight*) about near-future social situations (10–15 years later). According to Loveridge (2008), the scanning method was originally developed by Stanford Research Institute. Aguilar (1967), Fahey and King (1977), and Mueller and Smith (1984) discussed an elementary procedure for the scanning method. Since then, various procedures have been developed (e.g., Ansoff, 1975; Lesca, 2013; Loveridge, 2008; Mueller and Smith, 1984; Stoffels, 1994). In the present study, we used the following two-stage procedure based on previous studies (Washida, 2007; Washida et al., 2009). In the first phase (*scanning phase*), an individual briefly read (scanned) 150–200 newspaper, magazine, or webpage news articles (see Fig. 1 for an example) describing new technology,

the latest customs, fashion, social change, value system transition, or emerging social problems. After scanning all of the articles, the individual completed a *scenario generation phase*. In this phase, s/he was asked to generate scenarios about near-future social situations based on the scanned articles. S/he was required to provide a title for the scenario, IDs and keywords for articles referenced when generating the scenario, and a detailed summary of the scenario (the scenario generation sheet is shown in Fig. 2). Previous studies have discussed the efficacy of the scanning method and scenario generation for strategy planning, such as improvement of generated scenarios (Washida, 2007; Washida et al., 2009), reduction of cognitive bias, and increase of confidence and flexibility in strategy planning (Meissner and Wulf, 2013; Phadnis et al., 2015; Wright and Goodwin, 2009). As Phadnis et al. (2015) pointed out, few empirical studies have been conducted on the scanning method.¹ Although the scanning method can improve generation of near-future scenarios, there are individual differences.

In the present study, we examined this issue by comparing the scanning method between experts and non-experts. Experts were

* Corresponding authors at: Graduate School of Arts and Sciences, The University of Tokyo, 3-8-1, Komaba, Meguro-ku, Tokyo, 153-8902, Japan.

E-mail addresses: hitohonda.02@gmail.com (H. Honda), ueda@gregorio.c.u-tokyo.ac.jp (K. Ueda).

¹ Exceptions are Kuhn and Sniezek (1996), Schoemaker (1993), and Phadnis et al. (2015). Phadnis et al. (2015) pointed out the following three factors with which empirical evidence on scanning method and scenario generation has not been accumulated; (1) scenario planning practices are highly personalized and hence difficult to compare, (2) strategy practices used by firms are often not publicized, (3) numerous factors outside researcher's control may exist.

1

A touch sensor for everything in daily life

Using this new sensor technology will dramatically improve applications of current technology. We will feel the usefulness of this technology everywhere, the same way we feel the usefulness of automatic doors.

Keywords: touch sensor, technology

Reference material

Disney Research has revealed a new sensing technology called Touché that uses a novel concept of Swept Frequency Capacitive Sensing (SFCS). The conventional capacitive touch sensing, that we know of, operates at a single frequency, which allows for single capacitive reading. In simple words, the human interaction with the touch screen can be termed binary – either you are touching or you are not. So, this SFCS technique sweeps over a range of frequencies. Passing this information to a recognition engine we get a provision for a wide variety of touch gestures; for example – not touching, touching, pinching or grasping. The Touché project is being developed at Disney Research Pittsburgh by Ivan Poupyrev in collaboration with Munehiko Sato (University of Tokyo) and Chris Harrison (HCII, Carnegie Mellon University).

(crazy engineers)

Fig. 1. Example article. The top box provides a summary of the article. Keywords and the full article are presented below. This example is translated into English from Japanese. In the actual study, most articles (149/151) were written in Japanese.

individuals who worked as consultants and used the scanning method daily.² Non-experts were individuals with no prior scanning method experience. Differences in scenario generation between these two groups would reflect important factors related to difference in foresight. In particular, as described above, the scanning method and scenario generation can lead to reduction of cognitive bias and increase of confidence and flexibility in strategy planning (Meissner and Wulf, 2013; Phadnis et al., 2015; Wright and Goodwin, 2009). Hence, experts in the scanning method and scenario generation may be more immune to various cognitive biases and more confident and flexible in scenario generation

than non-experts. However, previous studies have not examined detailed factors that produce differences between experts and non-experts in the scanning method and scenario generation. For example, although the literature on how cognitive or contextual factors affect creativity is large (e.g., Amabile, 1979; Förster et al., 2004; Friedman and Förster, 2001; Galinsky and Moskowitz, 2000; Maddux and Galinsky, 2009; Markman et al., 2007; Sternberg, 1999), few studies have been conducted in the context of scanning method and scenario generation.

Then, what is the difference in generating scenarios using the scanning method between experts and non-experts? There may be differences in both or one of the two phases of the scanning method. For the scanning phase, we examined differences in subjective impressions for articles between experts and non-experts. Brown et al. (1998), and Nijstad and Stroebe (2006) claimed that the knowledge accessed when generating ideas plays an important role in generating creative

² In the present study, we assumed that the experts for the present scanning method were those who, in their daily work, collected articles for the scanning phase and used the method many times. Based on this criterion, the number of experts in Japan is around ten.

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