

## **Transliminal View of Intuitions in the Workplace<sup>1</sup>**

Rense Lange  
*Integrated Knowledge Systems, Inc.*

James Houran  
*20|20 Assessment™*

**Summary.** Intuition has received increasing attention and study as a component of managerial decision-making. The conceptualization of intuition as a non-sequential information processing mode, which comprises both cognitive and affective elements and results in direct knowing without any use of conscious reasoning, strongly suggests that transliminal processes are involved in the production or moderation of these experiences. To test this idea, an online sample of 889 individuals spanning four management levels completed measures of Transliminality, Intuitive Decision-Making Style and Self-Reported Intuitions in the workplace. Self-reported intuitions significantly correlated with an Intuitive Decision-Making Style and Transliminality. Gender was not confirmed as a consistent predictor of intuitions. Further, self-reported intuitions increased with higher management level, independently of transliminality. The findings are consistent with a two-mechanism of intuition whereby transliminality equates to intuitive predisposition which is subsequently honed or reinforced over time by tacit knowledge that comes from work experience or structured training.

Running Head: TRANSLIMINALITY AND INTUITIONS

---

<sup>1</sup> This study was supported by a grant from the Bial Foundation (bursary #59/08), Portugal. Address correspondence to J. Houran, 2561 Hall Johnson Rd, #1217, Grapevine, TX, 76051 or email ([jhouran@2020skills.com](mailto:jhouran@2020skills.com)).

### **A Transliminal View of Intuitions in the Workplace**

*Transliminality* is a perceptual-personality trait that reflects the tendency for psychological material to cross (*trans*) thresholds (*limines*) into and out of consciousness. Reviews show that the major correlates of transliminality are syncretic cognitions (Lange et al., 2000; Houran et al., 2006) - i.e., the fusion of perceptual qualities in subjective experience such as: *physiognomic perception* (the fusion of perception and feeling); *synesthesia*, (the fusion of sensory modalities) and *eidetic imagery* (the fusion of imagery and perception). Accordingly, transliminality is conceptualized as enhanced interconnectedness between brain hemispheres, as well as among frontal cortical loops, temporal-limbic structures and primary or secondary sensory areas or sensory association cortices (Houran, Hughes, Thalbourne & Delin, 2006; Thalbourne, Crawley & Houran, 2003; Thalbourne, Houran, Alias, & Brugger, 2001). Studies of perception, imagery and memory all provide evidence for a threshold that mediates unconscious-conscious awareness, and several independent experiments are consistent with the neurological interconnectedness model of transliminality in particular (Crawley, French & Yesson, 2002; Houran et al., 2006; Fleck et al., 2008).

Although the literature on mental boundaries in relation to workplace settings is growing – including such topics as managerial decision-making and “entrepreneurial intuition” (e.g., Eisenhardt & Zbaracki, 1992; Parikh, Neubauer & Lank, 1994; Eisenhardt, 1999; Bradley, 2006; La Pira & Gillin, 2006) – the influence of transliminality on occupational behavior and outcomes has not been studied. Yet, there are compelling reasons to hypothesize that business leaders or visionaries who have “flashes of genius” or strong intuitions about key decisions or discoveries are examples of transliminality manifesting in professional or occupational contexts. For

instance, Langley, Mintzberg, Pitcher, Posada and Saint-Macary (1995) concluded that decision-making processes are partially driven by emotion, imagination and memories crystallized into occasional insights. Eisenhardt and Zbaracki (1992) echoed this view in their multidimensional approach to decision-making encompassing bounded rationality, heuristics, insight and intuition. Further, intuitions' phenomenology suggests that transliminal processes are at work. In particular, most researchers acknowledge that (1) intuitive events originate beyond consciousness, (2) information is processed holistically and (3) intuitive perceptions are frequently accompanied by emotion (Shapiro & Spence, 1997; Sinclair & Ashkanasy, 2005). Sinclair and Ashkanasy (2005) therefore defined intuition as *a non-sequential information processing mode, which comprises both cognitive and affective elements and results in direct knowing without any use of conscious reasoning* (cf. Simon, 1987; Epstein et al., 1996; Shapiro & Spence, 1997).

Sinclair and Ashkanasy's (2005) observations parallel the psychophysiological model of transliminality described above and suggest that intuition could be a phenomenon caused or moderated by transliminality. Thus, we expect scores on transliminality to correlate positively with scores on measures of an intuitive decision-making style (Hypothesis 1) and self-reported intuitions (Hypothesis 2) in the workplace. Further, we predict that reports of workplace intuitions will increase with progressively higher employment (management) levels (Hypothesis 3). In other words, individuals with increasingly greater professional experience, company and market knowledge, decision-making authority and likelihood of facing solving ill-defined problems without existing precedents or non-routine decisions would seem more likely to experience intuitions in the workplace and show a willingness to act on them (cf. Simon, 1960; Agor, 1984; Parikh et al., 1994; Andrews, 1999). This prediction is in line with the general

concept of entrepreneurial intuition -- the basic idea that successful entrepreneurs or managers are passionate innovators and risk-takers who have extraordinarily accurate hunches about the locus of new future business opportunities (La Pira & Gillin, 2006).

Finally, Sinclair and Ashkanasy (2005) cautioned that studies are often confounded by the fact that gender is an inconsistent predictor of intuition, although popular belief and many empirical studies suggest that women are more intuitive than men (Agor, 1986; Parikh et al., 1994; Pacini & Epstein, 1999; McCraty, Atkinson & Bradley, 2004) (Hypothesis 4). Thus, respondents' sex should be included as an independent variable to address this issue.

### Method

*Participants.* Data were collected from members of a large and free social networking website. Invitations were sent randomly by the website administration to 1,300 members' email inboxes. No incentives were offered and participation was voluntary. With respect to this sampling format, we agree with others (e.g., Gosling, Vazire, Srivastava, & John, 2004; Naglieri, Drasgow, Schmit, Handler, Prifitera, Margolis, & Velasquez, 2004; Skita & Sargis, 2005, 2006) that the Internet is a powerful tool with which to investigate psychological constructs efficiently using large samples of individuals other than the typical self-selected samples of university students who take introductory psychology courses. The instructions described participation as part of a larger study on intuitions, belief systems and the permeability of mental boundaries. The final sample ( $n = 889$ ) consisted of 507 men and 382 women ( $M_{age} = 33.4$  yrs.,  $SD = 29.2$ , range = 17-73 yrs.) who came primarily from English speaking countries (USA = 492, UK = 124, other = 54). Respondents' were also asked about their employment and the management level of their jobs. The breakdown was: "Currently not Employed as a Manager" (control group)

( $n = 543$ ), “Entry/Line Level” ( $n = 74$ ), “Middle Management” ( $n = 167$ ) and “Senior Level Executive/Company Officer” ( $n = 105$ ).

*Materials.* In addition to the demographic information, respondents completed three questionnaires in the order below:

The *Revised Transliminality Scale* (RTS: Lange, Thalbourne et al., 2000, cf. Houran, Thalbourne & Lange, 2003). This is a Rasch scaled version of Thalbourne’s (1998) original 29-item, true/false scale (Form B). Twelve items from the original scale are excluded from the scoring of the test due to age and gender biases. However, the remaining seventeen test items constitute a unidimensional Rasch (1960/1980) scale. These 17-test items share a common underlying dimension and span seven domains: hyperesthesia, (fleeting) hypomanic or manic experience, fantasy-proneness, absorption, positive (and perhaps obsessive) attitude towards dream interpretation, mystical experience and magical thinking. The Rasch reliability of the RTS is .82 (Lange et al., 2000). Also, Thalbourne (2000) found the 29-item scale to have a test-retest reliability of .88 ( $p < .001$ ) over seven weeks, and further analysis (Houran et al., 2003) on this same data set showed that the 17-item RTS has a test-retest reliability of .82 ( $p < .001$ ).

*Intuitive Decision Making Profile* (IDMP: Andrews, 1999). This is a 40-item questionnaire using a five-point Likert scale (anchored by “To a Very Great Extent” and “To a Very Small Extent”) that addresses three proposed factors (and eight sub-factors) of an intuitive processing mode: *Resources and Readiness* (“knowing with precedence”: three subscales of Knowledge and Experience, Reflection and Stress and Time Management Techniques), *Overcoming Blocks to Accessing Resources* (“psychological biases”: three subscales of Emotional Biases, Cognitive Biases and Stress/Time Pressures) and *Practicing Intuitive Decision Making* (“pattern recognition”: two subscales of Recognizing patterns and Recognizing Physical

Cues). Andrews (1999, p. 31) provided a brief description of the technical development of this questionnaire and a table of preliminary normative data. In our sample the Rasch reliabilities (see Wright & Masters, 1982) for the three factors listed above were 0.87, 0.59 and 0.50, respectively (ignoring item misfit).

Finally, we administered an experimental set of questionnaire items to measure self-reported experiences of intuitions in workplace settings. We call this study-specific questionnaire the *Business Intuitions Inventory* (BII). Questions were designed by a panel consisting of social and industrial-organizational psychologists and employees at entry, mid-management and senior levels who claimed to have had frequent and accurate intuitions in their careers. The question set aimed to cover content related to the phenomenology of intuitions identified by Sinclair and Ashkanasy (2005). The original version of the BII contained the 20 questions shown in Table 1, three of which were reverse-scored. The response format was a four-point Likert Scale anchored by “Disagree Completely” and “Agree Completely.”

Table 1 about here

*Rasch Scaling.* While Lange et al.’s (2000) Revised Transliminality Scale is a Rasch scaled instrument, the psychometric properties of the other two instruments are unknown. Accordingly, Andrich’s (1978) rating scale model will be applied to the BII’s items using the Winsteps software (Linacre, 2009). Items’ fit will be evaluated using the outlier sensitive “Outfit” mean-square fit statistic. As is customary, Outfit values in the range 0.7 to 1.4 are deemed acceptable. Additionally, tests for differential item functioning (Wright & Masters, 1982) will be performed across respondent’s sex and management levels. Second, although the three IDMP factors will be Rasch scaled, no attempts will be made to refine this questionnaire.

Table 2 about here

## Results

### *Preliminaries*

The BII received good psychometric support. Based on Andrich's (1978) rating scale model, the Outfit-all column of Table 1 shows that the three reverse-scored items all showed considerable misfit (Outfit > 1.65) and these items were omitted from all further analyses. Also, the fit of the rating scale categories was acceptable (all Outfit < 1.2). The Rasch reliability of the resulting measure was 0.83 ( $M = -0.38$ ,  $SD = 1.67$ ,  $Range = 10.8$  Logits). Supporting convergent validity, Table 2 shows that the BII was positively correlated with the three major factors of the Intuitive Decision Making Profile. All Pearson correlations between the BII and the eight individual sub-factors of the IDMP were positive ( $p < .05$ ), except for the Emotional Biases sub-factor which showed a non-significant correlation ( $r = 0.02$ ).

Table 3 about here

*Item Hierarchy.* The fit of the Rasch model implies that the BII items form a true hierarchy in which "easier" items consistently have a greater probability of receiving higher ratings than do "harder" items. Items' "difficulty" is reflected by their location and Table 1 lists the items ordered by decreasing difficulty, such that items near the bottom of the table consistently received higher endorsement. (*Note:* The item numbers refer to their order of administration). Starting at the lowest levels, it can be seen that BII is increasingly characterized by "gut feelings" (Items 4, 12, and 18), spontaneous occurring or informally defined solutions (Items 2, 17, 16, 7) and a feeling of vindication and justification for having intuitive insights (Items 9, 10, 11, 12, 15). The highest BII levels are typified by "flashes of genius" (Item 6), "intense or vivid thoughts" (Item 5), predicting the future (Item 13) and recognition of intuitive abilities by coworkers (Item 19). It thus appears that business intuitions start with private events which are at higher levels are augmented by intense experiences coupled with perceived social verification.

*Differential Item Functioning.* The columns labeled DIF in Table 1 show the results of tests for differential item functioning (DIF) for respondents' Sex and Management Level. Women disproportionately endorse "People at work often come to me for personal advice because they regard me as very perceptive or wise" relative to men with equal BII levels, perhaps indicating that women tend emphasize their own insights at the personal level ( $p < .01$ ). Also, three items exhibit DIF by Management Level ( $p < .01$ ). Interestingly, Middle level managers disproportionately feel that their unpopular opinions will be vindicated (Item 11). Also, lower level managers are disproportionately at a loss to explain the source of their intuition (Item 7), while such managers also stress the role of their own direct experience over the use of formal knowledge. These two findings are consistent with the type of decisions required from those in lower management positions.

Given the potential of differential item functioning to distort the BII measures, the raw-score-to-Rasch transformations were computed separately for each of the four Management groups. For each group, across the entire raw score range the estimated Rasch measures fell well within one SE of items' common (i.e., combining all four groups') calibrations (curves not shown). Thus, although the item hierarchy differs across management level, the DIF effects summarized in Table 1 have no noticeable effect on BII. Analogous findings were obtained for the Sex variable.

### *Tests of Hypotheses*

The prediction that the Revised Transliminality Scale should correlate positively both with the IDMP and the Business Intuitions Inventory was only partially confirmed. Specifically, Table 3 shows that transliminality had an extremely weak relation to two of the three factors of



the IDMP, which offers little support for Hypothesis 1. However, in support of Hypothesis 2, a moderately strong association was observed between transliminality and experiences of workplace intuitions as measured by the BII.

Figure 1 about here

After standardizing the RTS and BII measures to z-scores, Hypotheses 3 and 4 were addressed simultaneously by an Analysis of Variance (ANOVA) with repeated measures over RTS and BII, while using Sex and Management Level as between variables. Only two ANOVA effects reached statistical significance. First, as is shown in Figure 1, the repeated measure interacted with Management Level ( $F(3,881) = 4.48, p < 0.01$ ). In support of Hypothesis 3, note that BII increases across Management Level ( $F(1,885) = 4.34, p < .05$ ) indicating that workplace intuition increases with Level of Management. By contrast, RTS does not show this increase ( $F(1,885) = 1.93, p > 0.16$ ). Thus, despite the considerable Pearson correlation between RTS and BII mentioned above – the high BII average observed for the High Management group *cannot* solely be the by-product of Transliminality.

Figure 2 here

Second, as is shown in Figure 2, Sex interacts with Management Level ( $F(3,881) = 2.65, p < .05$ ). This interaction indicates that non-manager women showed significantly lower levels RTS and BII ( $t(541) = 2.58, p < .01$ ) than did non-manager men. By contrast, for managers, men and women showed approximately equal levels of combined BII and RTS ( $t(344) = 1.04, p < .029$ ). We note parenthetically that Sex and Management Level do not interact with RTS vs. BII to produce a significant three-way effect ( $F(3,881) < 1.00$ ). Taken together, we found no evidence for Hypothesis 4 that gender is significantly associated with intuitive experiences.

## Discussion

Our findings are consistent with Sinclair and Ashkanasy's (2005) model of intuition as a non-sequential information processing mode, which comprises both cognitive and affective elements and results in direct knowing without any use of conscious reasoning. Experiences of intuitions in the workplace correlated both with transliminality and an intuitive decision-making style. However, whereas business intuition increased monotonically with Management level, this was not true for transliminality.

To explain this finding we refer to the conclusions of previous researchers (Boucouvalas, 1997; Shirley & Langan-Fox, 1996; Sinclair & Ashkanasy, 2005) that the cognitive and affective elements of intuition could derive from two primary mechanisms. For example, one view defines intuition as an *experience-based phenomenon* that draws on tacit knowledge accumulated through experience and retrieved through pattern recognition (e.g., Behling & Eckel, 1991; Brockman & Anthony, 1998; Isenberg, 1984; Klein, 1998; Simon, 1987). A second view is that these experiences follow from a more spontaneous, natural *psychophysiological ability* that rely heavily on sensory and affective elements in the intuitive process (e.g., Bastick, 1982; Epstein, 1998; Parikh et al., 1994; Petitmengin-Peugeot, 1999).

Applying these ideas to the present results, we propose that intuitive material likely arises spontaneously for those high in transliminality, since this variable involves syncretic cognition and is also associated with many perceptual-personality traits that arguably promote non-sequential information processing such as warmth, abstractedness, openness to change and a lack of rule consciousness, self control and tough-mindedness (Lange et al., 2000). Thus, transliminality might facilitate intuition in the same way that transliminality is a catalyst for other transpersonal or anomalous experiences involving syncretic cognition (see Lange et al., 2000;

Houran et al., 2006). On the other hand, awareness and use of intuition might also be developed over time through work experience or via a structured training process. For example, Andrews (1999) devised a training program to help employees deliberately recognize and apply intuition as part of an effective decision making strategy. Tacit knowledge or structured training would help to explain intuitive experiences in those who lack transliminality and hence a spontaneous tendency to integrate a steady stream of affect, imagery, ideation and perception. These points underscore the important differences previous researchers often ignore between intuitive predisposition, preference, ability or actual use.

The present findings support Sinclair and Ashkanasy's (2005) basic tenet that intuition is best modeled as the confluence of these two primary mechanisms. The increased levels of intuitions across progressively higher management levels found in this study were not associated with concomitantly higher levels of transliminality. In other words, transliminality was not responsible for the effects of management level observed here. Of course, progressively higher levels of tacit knowledge (inferred by management level) could very well account for these trends. Thus, in line with Sinclair and Ashkanasy's (2005) model of intuition, our results are consistent with the interpretation that tacit knowledge hones or reinforces a natural, psychophysiological ability for producing the cognitive and affective contents of intuitions.

This explanation might also shed light on the controversy surrounding the relationship between gender and intuitions. Like some previous work (Taggart, Valenzi, Zalka & Lowe, 1997), women showed no clear advantage over men with respect to intuition-related variables. Yet, lower level women managers were more intuitive than women non-managers. The pattern of results related to gender found in this study thus prompts us to wonder whether we could be dealing with a situation where effects of "experience level" (implied tacit knowledge) have been

misinterpreted by previous researchers as gender effects -- with any differences observed being wiped out when levels of tacit knowledge are accounted for.

On a broad level, our results contribute to the growing literature that intuition is a valid psychological phenomenon worthy of continued and robust study across many disciplines. Future work should examine in depth the possible typologies of intuitions, arousal states that may suppress or encourage intuitions and the extent to which different typologies are related to transliminal processes. For instance, we emphasize that the intuitive experiences studied here were general in nature rather than being highly context-specific. This is an important limitation that may have affected the results, and clearly additional work is needed to determine whether our pattern of results replicates across different types of intuitions (cf. Khatri & Ng, 2000; Wally & Baum, 1994). Such differences would not be unexpected since transliminality has been argued to be partly a state variable and a trait variable (Houran & Thalbourne, 2001). The same idea could apply to intuitions, with the prevalence and accuracy of different types of intuitions partly or wholly depending on the degree of transliminality involved under specific circumstances. Sinclair and Ashkanasy's (2005) model of intuition likewise stresses the importance of context specific factors related to motivation, affect, individual disposition and nature of the problem requiring a decision.

Our own intuition is that greater neurological interconnectedness (Houran et al., 2006; Thalbourne et al., 2003; Thalbourne et al., 2001) leads to more frequent, vivid and perhaps accurate intuitions. McCraty et al. (2004) lend further credence to this idea in that they found experimental evidence that intuitive processes involve interactions among the frontal, temporal, occipital and parietal brain areas, and perhaps even the cardiovascular system. Still, we expect that intuitions will be most robust when highly transliminal individuals have considerable tacit

knowledge that has been accumulated through experience and retrieved through pattern recognition and at the same time are in a situation where they are facing non-routine decisions or ill-defined problems without existing precedents.

## References

- Agor, W. H. (1984). *Intuitive management: integrating left and right brain management skills*. New York, NY: Prentice Hall Press.
- Agor, W. H. (1986). *The logic of intuitive decision making: a research-based approach for top management*. New York, NY: Quorum Books.
- Andrews, J. (1999). *Intuitive decision making profile: Facilitators guide*. King of Prussia, PA: HRDQ.
- Andrich, D. (1978). Scaling attitude items constructed and scored in the Likert tradition. *Educational and Psychological Measurement*, 38, 665-680.
- Bastick, T. (1982). *Intuition: how we think and act*. New York, NY: John Wiley and Sons.
- Behling, O., & Eckel, N. L. (1991). Making sense out of intuition. *Academy of Management Executive*, 5, 46-54.
- Boucouvalas, M. (1997). Intuition: the concept and the experience. In R. Davis-Floyd and P. S. Arvidson (Eds.), *Intuition: the inside story* (pp. 3-18). New York, NY: Routledge.
- Bradley, R. T. (2006). The psychophysiology of entrepreneurial intuition: a quantum-holographic theory. *Proceedings of the Third AGSE International Entrepreneurship Research Exchange*, February 8–10, 2006, Auckland, New Zealand.
- Brockman, E. N., & Anthony, W. P. (1998). The influence of tacit knowledge and collective mind on strategic planning. *Journal of Managerial Issues*, 10, 204-219.
- Burke, L. A., & Miller, M. K. (1999). Taking the mystery out of intuitive decision making. *Academy of Management Executive*, 13, 91-99.
- Crawley, S. E., French, C. C., & Yesson, S. A. (2002). Evidence for transliminality from a subliminal card guessing task. *Perception*, 31, 887-892.

- Eisenhardt, K. M. (1999). Strategy as strategic decision making. *Sloan Management Review*, Spring: 65-72.
- Eisenhardt, K. M., & Zbaracki, M. J. (1992). Strategic decision making. *Strategic Management Journal*, 13, 17-37.
- Epstein, S. (1998). Emotions and psychology from the perspective of cognitive-experiential self-theory. In W. F. Flack and J. D. Laird (Eds.), *Emotions in psychopathology: theory and research, series in affective science* (pp. 57-69). New York, NY: Oxford University Press.
- Epstein, S., Pacini, R., Denes-Raj, V., & Heier, H. (1996). Individual differences in intuitive-experiential and analytical-rational thinking styles. *Journal of Personality and Social Psychology*, 71, 390-405.
- Fleck, J. I., Green, D.L., Stevenson, J. L., Payne, L., Bowden, E. M., Jung-Beeman, M. & Kounios, J. (2008). The transliminal brain at rest: baseline EEG, unusual experiences, and access to unconscious mental activity. *Cortex*, 44, 1353-1363.
- Gosling, S. D., Vazire, S. Srivastava, S., & John, O. P (2004). Should we trust web-based studies? a comparative analysis of six preconceptions about internet questionnaires. *American Psychologist*, 59, 93-104.
- Houran, J., Hughes, L. F., Thalbourne, M. A., & Delin, P. S. (2006). Quasi-experimental study of transliminality, vibrotactile thresholds and performance speed. *Australian Journal of Parapsychology*, 6, 54-80.
- Houran, J., & Thalbourne, M. A. (2001). Theoretical refinements on transliminality and entity encounter experiences. *Journal of the Society for Psychical Research*, 65, 241-256.
- Houran, J., Thalbourne, M. A., & Lange, R. (2003). Methodological note: Erratum and comment

- on the use of the Revised Transliminality Scale. *Consciousness and Cognition*, 12, 140-144.
- Isenberg, D. J. (1984). How senior managers think. *Harvard Business Review*, Nov-Dec, 81-86.
- Khatri, N., & Ng, H. A. (2000). The role of intuition in strategic decision making. *Human Relations*, 53, 57-86.
- Klein, G. (1998). *Sources of power: how people make decisions*. Cambridge, MA: MIT Press.
- Lange, R., Thalbourne, M.A., Houran, J., & Storm, L. (2000). The Revised Transliminality Scale: Reliability and validity data from a top-down purification procedure. *Consciousness and Cognition*, 9, 591-617.
- Langley, A., Mintzberg, H., Pitcher, P., Posada, E., & Saint-Macary, J. (1995). Opening up decision making: the view from the black stool. *Organization Science*, 6, 260-279.
- La Pira, F., & Gillin, M. (2006). Non-local intuition and the performance of serial entrepreneurs. *International Journal of Entrepreneurship and Small Business*, 3, 17-35.
- Linacre, J. M. (2009) *WINSTEPS Rasch measurement computer program*. Chicago: Winsteps.com.
- McCraty, R., Atkinson, M. & Bradley, R. T. (2004). Electrophysical evidence of intuition: Part 2. A system-wide process? *Journal of Alternative and Complementary Medicine*, 10, 325-336.
- Naglieri, J. A., Drasgow, F., Schmit, M., Handler, L., Prifitera, A., Margolis, A., & Velasquez, R. (2004). Psychological testing on the Internet: new problems, old issues. *American Psychologist*, 59, 150-162.
- Pacini, R., & Epstein, S. (1999). The relation of rational and experiential information processing styles to personality, basic beliefs, and the ratio-bias phenomenon. *Journal of Personality*



*and Social Psychology*, 76, 972-987.

Parikh, J., Neubauer, F., & Lank, A. G. (1994). *Intuition: the new frontier in management*.

Cambridge, MA: Blackwell.

Petitmengin-Peugeot, C. (1999). The intuitive experience. *Journal of Consciousness*, 6, 43-77.

Rasch, G. (1960/1980). *Probabilistic models for some intelligence and attainment tests*. Chicago, IL: MESA Press.

Shapiro, S., & Spence, M. (1997). Managerial intuition: a conceptual and operational framework.

*Business Horizons*, 40, 63-69.

Shirley, D. A., & Langan-Fox, J. (1996). Review of intuition. *Psychological Reports*, 79, 563-584.

Simon, H. A. (1960). *The new science of managerial decision*. New York, NY: Harper and Row.

Simon, H. A. (1987). Making management decisions: the role of intuition and emotion. *Academy of Management Executive*, 1, 57-64.

Sinclair, M., & Ashkanasy, N. M. (2005). Intuition: myth or decision-making tool? *Management Learning*, 36, 353-370.

Skitka, L. J., & Sargis, E. G. (2005). Social psychological research and the Internet: the promise and the perils of a new methodological frontier. In Y. Amichai-Hamburger (Ed.), *The social net: the social psychology of the internet* (pp. 1-25). Oxford, England: Oxford University Press.

Skitka, L. J., & Sargis, E. G. (2006). The Internet as psychological laboratory. *Annual Review of Psychology*, 57, 529-555.

Taggart, W. M., Valenzi, E., Zalka, L., & Lowe, K. B. (1997). Rational and intuitive styles: commensurability across respondents' characteristics.' *Psychological Reports*, 80, 23-33.

- Thalbourne, M. A. (1998). Transliminality: Further correlates and a short measure. *Journal of the American Society for Psychological Research*, 92, 402-419.
- Thalbourne, M.A. (2000). Transliminality and creativity. *Journal of Creative Behavior*, 34, 93-202.
- Thalbourne, M.A., Crawley, S. E., & Houran, J. (2003). Temporal lobe lability in the highly transliminal mind. *Personality and Individual Differences*, 35, 1965-1974.
- Thalbourne, M.A., Houran, J., Alias, A.G., & Brugger, P. (2001). Transliminality, brain function, and synesthesia. *Journal of Nervous and Mental Disease*, 189, 190-192.
- Wally, S., & Baum, R. J. (1994). Personal and structural determinants of the pace of strategic decision making. *Academy of Management Journal*, 37, 932-956.
- Wright, B. D., & Masters, G. N. (1982). *Rating Scale Analysis*. Chicago, IL: MESA Press.

Table 1: Summary of Rasch analyses on the Business Intuition Inventory items.

Item	Rasch							
	Outfit-	Loc	Sel	Sex	Low	Med	High	Non-Man
	Outfit-	Fit	DIF	DIF - Management Level				
8 *I have learned never to trust my gut feelings about what to do at work	1.03	0.84	1.23	-0.23	1.00	0.95	1.40	1.09
19 Subordinates, peers or supervisors have joked or commented that I must have psychic ability, because I tend to know exactly the right thing to do at work	1.65*							
13 Sometimes I feel that have the uncanny ability to predict or know the future when it comes to important work decisions	0.84	0.79	0.95	0.10	1.16	0.97	0.97	1.04

1	*My major decisions at work nearly always result from extensive quantitative analysis of data	<b>2.36</b>	0.79	0.31	0.90	-0.06	0.35	0.53	0.46	0.46
6	I am surprised at how often I get flashes of genius when it comes to my work		0.79	0.31	0.90	-0.06	0.35	0.53	0.46	0.46
14	My best ideas or decisions usually come in the middle of a work crisis		0.84	0.29	0.98	0.25	0.10	0.26	0.43	0.52
5	The best ideas I come up with at work tend to come to me as intense or vivid thoughts, feelings or images		0.82	0.28	0.95	-0.05	0.84	0.66	0.29	0.32
15	My best ideas or decisions usually happen when I am under significant pressure at work		0.90	0.17	1.07	0.24	0.27	-0.06	0.20	0.42
11	My unpopular opinions about important		0.67	0.10	0.78	0.30	<b>0.27<sup>b</sup></b>	<b>-0.01</b>	-	<b>0.38</b>

	business strategies almost always turn out to be correct								<b>0.45</b>
10	I seem to know what customers or clients want before they even do	0.86	-0.01	1.00	-0.33	0.14	-0.12	0.01	0.15
7	Typically I do not know where my best work ideas come from -- they just come to me	1.05	-0.02	1.28	-0.19	<b>0.07</b>	<b>0.42</b>	<b>0.44</b>	<b>-0.11</b>
12	I take important risks at work when my gut instinct or intuition tells me to	0.73	-0.07	0.83	-0.02	-0.03	0.16	0.08	-0.05
18	My gut decisions at work are almost accurate when I am under pressure	0.76	-0.16	0.88	0.00	-0.03	-0.09	0.07	-0.13
9	I usually know the right decision at work before anyone decides what to do	0.73	-0.24	0.84	0.19	0.01	-0.24	0.45	-0.16

16	I am extremely accurate when making important decisions at work even when I do not have all the hard facts or data at the time	0.72	-0.32	0.85	0.00	-0.11	-0.43	0.17	-0.29
3	More often than not, effective solutions to important work problems spontaneously flash into my mind	0.80	-0.46	0.93	0.14	-0.41	-0.07	0.39	-0.61
2	In general, my decisions at work are much more affected by industry experience and lessons learned than by the results of formal research and systematic evaluation of alternatives	1.19	-0.78	1.33	0.26	-1.50	-0.93	0.24	-0.85
17	*My work decisions are most effective when I disregard my own thoughts and feelings and rely on the opinions and	<b>2.39</b>							

ideas of others									
20	People at work often come to me for personal advice because they regard me as very perceptive or wise	1.06	-0.91	1.25	<b>0.41<sup>b</sup></b>	-1.18	-0.97	1.04	-1.01
4	Those who know my work best would say that my gut feelings about work decisions are extremely accurate	0.69	-1.05	0.81	-0.13	-1.00	-0.99	1.52	-1.17

Items preceded by \* were reverse-scored

a) Misfit because Outfit > 1.4

b)  $p < .01$

Table 2: Pearson correlations (and significance levels) between scores on the Business Intuitions Inventory and the Intuitive Decision Making Profile.

	IDMP: <i>Resources &amp; Readiness</i>	IDMP: <i>Overcoming Blocks to Accessing Resources</i>	IDMP: <i>Practicing Intuitive Decision Making</i>
BII	.33 (.001)	.32 (.001)	.27 (.001)



Table 3: Pearson correlations (and significance levels) between scores on the Revised Transliminality Scale and measures of Intuition-related variables.

	BII	IDMP: <i>Resources &amp; Readiness</i>	IDMP: <i>Overcoming Blocks to Accessing Resources</i>	IDMP: <i>Practicing Intuitive Decision Making</i>
Revised Transliminality Scale	.38 (.001)	.03 (ns)	.09 (.01)	.09 (.01)

Figure 1: Management Level by BII vs. RTS Interaction

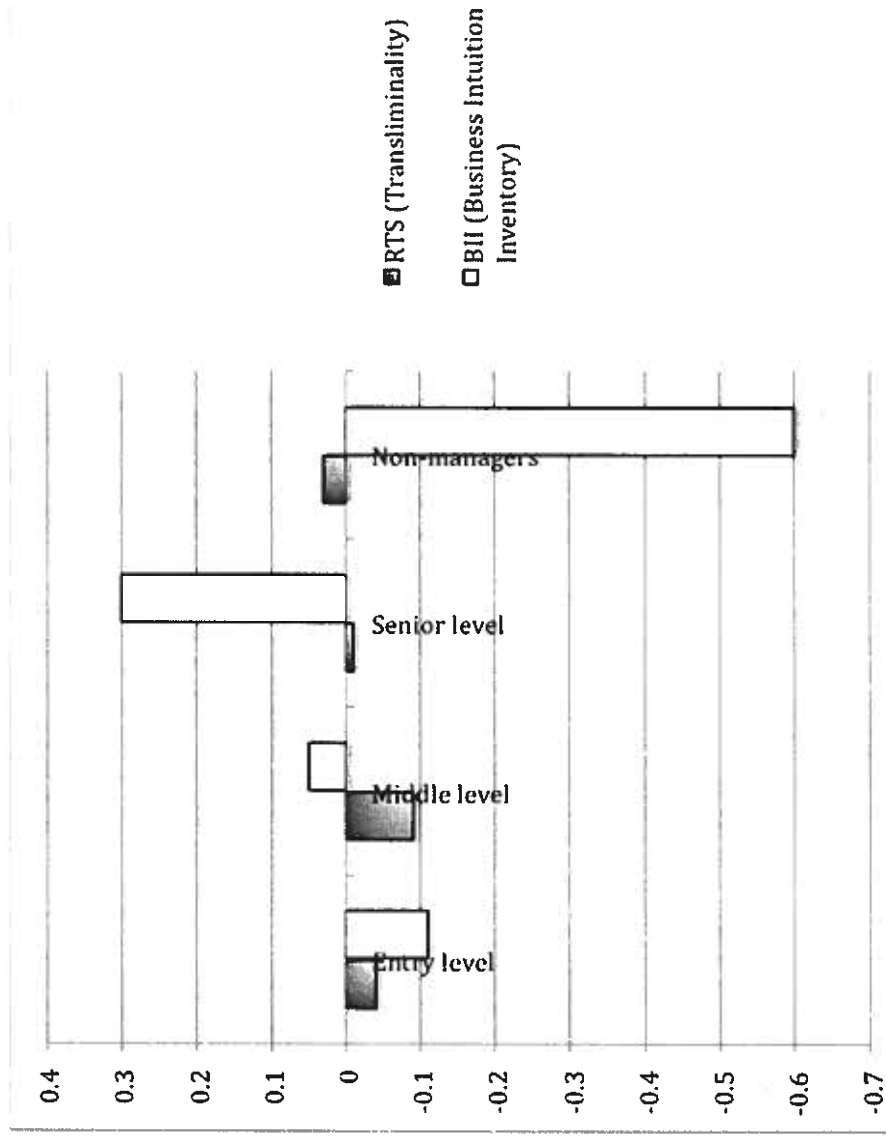


Figure 2: Management Level x Sex Interaction

