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Three rational and twelve intuitive Decision-Making Styles (15 types) - The RIEMBSHUAPDT Approach

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Unterstützung

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Abstract

Intuition is seen as a widely accepted decision-making approach in various research fields. Many different rational and intuitive decision-making styles are suggested by scholars and researchers, e.g. in the studies of CEST, GDMS, REI, PMPI, CoSI, PID, TIntS, and USID. An integrated framework that effectively combines and consolidates various approaches is currently missing. However, this is needed for practical implementation and theoretical and empirical research of intuitive decision-making. Lately, Launer and Svenson (2022a) summarized five intuition styles in a research project funded by the European Union (RHIA). In a local follow-up study Launer and Svenson (2022b) enlarged the concept to seven intuition styles in a local study in the city of Uelzen. Svenson, Pietrzack and Launer (2023) described seven intuition styles in a literature review. Launer and Cetin (2023) are working on nine different types of intuition and starting to develop a new measurement instrument. However, there are more intuition styles including new types based on technology. This study describes the theory of three rational and eleven intuitive decision-making styles: Rational: Analytic, Knowing, Planning. Intuition: Holistic Unconscious, Spontaneous, experienced-based Heuristics, Feelings, Body Impulses, Mood, Anticipation, slow Unconscious Thoughts, Support by People, Support by Technology, Creating Style, and Digital intuition (RIEMBSHUAPDT Approach).

The main purpose of this paper is to develop a new and comprehensive theory on rational and intuitive decision-making embracing 3 rational and 11 intuitive decision-making styles. The method is a non-systematic literature review. The result is a comprehensive Theory on rational and intuitive Decision-Making as basis for empirical research in 2024.

Introduction

Based on the EFRE-research project, Launer started to research Intuition in 2018 (Launer, 2018). First, a literature study was established as a theoretical basis (Launer et al., 2020b). In a pre-test, the first items were selected and tested (Launer et al., 2020a; Marcial & Launer, 2021). The results were presented at the 4th Ostfalia Conference (later CoSiM Conference) in 2020 (Launer et al., 2020). In a global study it was tested by Launer and Svenson (2022a), if there are different types of intuition, that can be described in a multi-dimensional approach. The data was tested in a multicultural sample in over 30 countries with n = 5570. A new Intuition Model in the Workplace was tested on the multicultural Sample by Launer and Cetin (2021). The Validity and Reliability of the Measurement Instrument was confirmed and a first global Confirmation Model for Intuition @ the Workplace established. The model was presented at the IACIS Conference Europe in 2021. With Svenson, Steffen, and Harteis, Launer researched the Public and Private Sector-Specific Preferences for Intuition and Deliberation in Decision-Making (Svenson et al., 2022).

In a second empirical study, Launer and Svenson (2022b) tested the different types of intuition in a local study in Uelzen, Germany (n = 300). Tests were performed in a dual and multi-dimensional approach leading to five different types of intuition. Based on these results, a pragmatic measurement instrument was developed to test rational and intuitive decision-making (Launer et al., 2021). The results were presented at the 5th Ostfalia Conference (later CoSiM Conference) 2021 (Launer et al., 2021). The results are still analyzed. The project was documented in a Working paper by Anselm and Launer (2022) from the theory via the item selection and the empirical study for validation.

As a follow-up study, Launer conducted a national study across Germany in 2022 by himself testing three rational and nine different types of intuitive decision-making styles (Launer & Cetin, 2023). The theory was based on a new literature study by Svenson, Pietrzak, and Launer (2023). The results were presented at the 6th international online CoSiM Conference 2022 (Launer, 2022).

15 types of rational and intuitive decision-making styles

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Later, the digital intuition was researched in theory (Launer, Svenson, Cetin & Pietrzak, 2022). The empirical confirmation study is ongoing in 2023. In 2023, Launer enlarged the theoretical basis beyond the validated models by additional intuitive decision-making styles: Creating Style based on the CoSI study by Cools and van den Broek (2007). Completely new is the intuition style Support by Technology.

The rational and twelve intuitive decision-making styles add up to the RIEMBSHUAPDT approach.

Intuition Measurement Studies

The early basis of this study is based on the Cognitive-Experiential Self-Theory (CEST) by Epstein (1973, 1980, 1983, 1984, 1985, 1990, 1991a, 1991b) describing a broad, integrative theory on personality, e.g. the conscious and unconscious mind. The Myers Briggs Indicator by Myers and McCauley (1986) described items distinguishing between intuition and sensing. They questioned "Do you pay more attention to information that comes in through your five senses (Sensing), or do you pay more attention to the patterns and possibilities that you see in the information you receive (Intuition). However, Langan-Fox and Shirley criticized the MBTI approach to be easy to manipulate by its own wished character. In addition, feelings were not represented well in the MBTI. This is why the MBTI inventory was not used in this study.

From 1996 to 1999, Pacini & Epstein (1999) developed the dual process theory instrument Rational-Experiential Inventory (REI) based on the Cognitive-Experiential Self-Theory (CEST) by Epstein, Epstein, Pacini & Norris (1998) and Epstein, Pacini, Denes-Raj & Heier (1996). They distinguished between rational and an experiential thinking style in relation to the big five personality styles. They describe intuition as in depth as an experiential style as a learning system that is holistic and preconscious, heuristical and automatic, rapid and primarily nonverbal. For the

authors, intuition is intimately associated with affect but actually also with holistic and heuristical intuition. All of these subdimension were included in our study based on later research results.

Almost parallel to the REI-study, Scott and Bruce (GDMS) conducted 1995 another breakthrough, multistage study on rational and intuitive decision-making based on Hunt (1989), Driver (1979) and Harren (1979). They started with one rational decision type and three types of intuition. The Analytical Style was described as a search & evaluation process using a logic and systematic analysis and evaluation in terms of specific goals (Keen, 1974; Mitroff, 1983). This can also be based on Allinson and Hayes' theory (1996) or Riding's (1997) analytic style. The intuitive style was described as feelings and hunches, dependent, and avoidant. They also found a fourth dimension during their analysis called spontaneous. In our study we follow this multi-dimensional approach and further develop the dimensions except for the avoidant style. In our pre-studies avoidance did not matter/work. The dependent decision-making style was ever since not further developed since the correlation were low. However, in our study the dependent style was confirmed as an independent decision-making style.

In 1999, Burns and D'Zurilla developed a new self-report instrument based on Epstein (1990) to a person's awareness and perception of his or her dominant mode of information processing in stress and coping situations. Beside the rational and emotional processing style they described an automatic processing style as quickly, efficiently, swiftly, aware, repetitive and experience-based. These items were incorporated in our study as fast spontaneous and experience-based intuition.

Researchers have identified various cognitive style models (Hodgkinson & Sadler-Smith, 2003) e.g. in organizational behavior and management literature (Hayes & Allinson, 1994; Hodgkinson & Sadler-Smith, 2003; Sadler-Smith & Badger, 1998). They traditionally focused on the distinction between analytic and intuitive thinking. However, results of empirical research on the relation between different cognitive style measures suggest that cognitive style is a complex variable with

multiple dimensions (Beyler & Schmeck, 1992; Bokoros, Goldstein, & Sweeney, 1992; Bostic & Tallent-Runnels, 1991). Cools and van den Broek (2007, CoSi) tried to examine whether reducing the large field of cognitive style theories to one bipolar cognitive style dimension is still warranted and wanted to develop a reliable, valid, and convenient instrument, the Cognitive Style Indicator (CoSI). In this instrument based on an extensive literature study, rational decision-making was described with a planning and knowing style, which we incorporated in our study. The third style creating was not used because it is focused on innovative solutions, variety in life, new ideas, extend boundaries and avoid routine. In our pre-studies it was concluded not to belong to intuitive decision-making. The distinction between intuition (based on REI) and creativity was also made in the Intuitive Behavior Questionnaire by Raidl & Lubart (2001).

Betsch (2004, 2008, PID) developed another scale for rationality and intuition. She did not add new knowledge but distinguished the two dimensions as independent scales. She distinguishes into Deliberation or Analytical and Planning (Cacioppo & Petty, 1982) and Intuition based on REI (Pacini & Epstein, 1999)). However, intuition was described as purely affective and not heuristical. In our study we added the heuristical dimension back in.

In 2014, Pretz et al. (TIntS) criticized that the current intuition styles were inadequately assessed. Based on his previous literature study (Pretz & Totz, 2007), they describe three types of intuition: Holistic intuitions integrate diverse sources of information in a Gestalt-like, non-analytical manner. In this study, we did not further distinguish into holistic big picture and holistic abstract. Inferential intuitions are based on previously analytical processes that have become automatic. Affective intuitions are based on feelings. While the two dimensions inferential (experience-based or expert intuition according to PMPI) and affective intuition (GDMS, REI, and PMPI) was described before, new was the separate dimension holistic based on Jung (1971), MBTI Indicator by Myers, McCaulley, Quenk, & Hammer (1998), Hammond (1996) according to the Unconscious Thought Theory by Dijksterhuis & Nordgren (2006).

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The latest item selection study known is performed by Pachur and Spaar (2015). They did not add new theories on intuition but rather confirmed the dimensions intuitive (spontaneous and affect-based) and a deliberative (planned and knowing incl. analytical). Using a domain-specific extension of the Unified Scale to Assess Individual Differences in Intuition and Deliberation (USID), they found that preference for intuition and preference for deliberation showed considerable variability across domains (e.g., choosing a dress vs. choosing a doctor). In addition, domain-specific preferences for intuition were consistently correlated with self-rated expertise in making decisions in the respective domain.

The following figure shows the existing styles in a summary.

		CEST 1994 Epstein	GDMS 1995 Scott / Bruce	REI 1999 Pacini / Epstein	PMPI 1999 Burns / D'Zurilla	CoSI 2007 Cools / van den Broek	PID 2004 Betsch	TintS 2014 Pretz et al	USID 2015 Pachur / Spaar
Rational	Analytical	Cognitive system	Rational: Analytical	Rational: Thinking	Rational Processing: Thinking fact-based		Deliberation / Analytical		
	Knowing					Cognitive Knowing			Deliberation: Knowing
	Planning					Cognitive Planning	Deliberation / Planning		Deliberation: Planning
Intuition	Emotional		Intuition: Emotional / Feelings / Instincts	Experiential: Feelings / Instinct	Emotional processing: Feelings / Instincts		Intuition: Feelings	Affective: Feelings	Affective: Feeling
	Body Impulses			Experiential: Gut Feeling / Heart	Emotional Processing: Gut Feeling		Intuition: Gut Feeling	Affective: Heart / Gut Feeling	Affective: Heart
	Holistic							Holistic Abstract and Big Picture	
	Spontaneous				Automatic Processing: Swift Decisions				Spontaneous
	Experience-based heuristics	Experiential: Associative, Automatic Learning			Automatic Processing: Experience		Intuition: Life experience, human understanding	Inferential: experience-based	Affective: Life experience, human understanding
	Dependent		Dependent						
Other	Avoidant		Avoidant						
	Creating					Creating			

New additional Dimension of Intuition

By summarizing all important items of the previous studies, this study identifies three rational decision styles (analytical, planning, and knowing) and six different intuition styles (feelings, spontaneous, experience-based heuristical, holistic, dependent). However, feelings are still a rough description of affective intuitions. In this study, feelings are described in more depth as emotional, body impulses, mood and anticipation (hunches). While all intuitive descriptions merely describe fast decisions, we add the long-term type of intuition described by Pretz et al (2014): Unconscious Thoughts Theory by Dijksterhuis & Nordgren (2006) as a separate dimension.

In all studies, it remains unclear what is meant with feelings or the general term gut feeling. In this study we tried to improve the intuition measurement scale by describing feelings (affective intuition) in more depth. The concept of gut feeling needs to be described newly from a broad and unspecific term to a more differentiated approach based on feelings in the stomach, colon and the visceral sensory system (Gershon, 2001; Hooper et al, 2001; Barbosa, Rescigno, 2010; Mayer, 2001; Arumugam et al 2011; Brandtzaeg, 2011; Cryan, Dinan, 2012; Haller, Hörmannspenger, 2013; Schemann, 2020), the interoception and somatic markers of the heart beating rate (Schandry, 1981; Polatos, Schandry, 2004; Dunn et al, 2007; Pollatos, Herbert, B. M., Matthias, Schandry, 2007; Garfinkel et al, 2015; Schulz, 2016) and skin arousals (Loggia, Juneau, Bushnell, 2011; Breimhiorst et al, 2011).

The mood is another affective emotional intuition type influencing the feeling (Bolte et al., 2003; Ekman 2007, Frijda 1988, Rottenberg, 2005; Gilbert 2006, Keltner et al. 2014, Keltner & Lerner 2010, Lazarus 1991, Loewenstein et al. 2001, Scherer & Ekman 1984; Lerner, Li, Valdesolo, Kassam 2015, Sinclair, 2020) and affective actions (Bechara, Damasio, & Damasio, 2000; Bower, 1991; Clore, Schwarz, & Conway, 1994; Fredrickson, 2000; Lerner & Keltner, 2000). Positive and negative moods are accompanied by qualitatively different information processing modes (Gray,

2001; Isen, 1999; Kuhl, 1983, 2000) well described in the affective infusion model (AIM) by Forgas (2001).

Hunches are described in the GDMS study as well as in REI, PID and Pachur and Spaar. Many researchers try to explain this atypical or paranormal type of decision making in depth (Honorton, Ferrari, 1989), as presentiments of future emotions (Radin, 2004), precognition (conscious cognitive awareness), premonition (affective apprehension) according to Bem et al. (2015), extrasensory perception (ESP) by Thalbourne and Haraldsson (1980) paranormal belief and experiences (Lange, Thalbourne, 2002), or automatic evaluation (Ferguson, Zayas, 2009). The received information in this regard comes from outside the body (Sinclair, 2011, 2014). In this study, we name this type of intuition the anticipation.

In a study by Carlson (2008) based on the TIntS by Pretz and Totz (2007), he included the dimension incubation based on the Unconscious Thought Theory by Dijksterhuis (2004). Decisions can not only be made fast but also after a period of time and (unconscious) reflection and activation (Bowers et al., 1990; Waroquier et al, 2010), incubation (Wallas, 1920; Shirley & Langan-Fox, 1996), unconscious thinking (Dijksterhuis and Nordgren (2006), distraction (Kohler, 1969), removal of blockages (Duncker, 1945), completion of schemes (Mayer, 1996), or in intuitive step-ups (Nicholson, 2000).

Based on the dimension Support by Others (dependent style) from the GDMS study by Scott and Bruce (1995), the Support by technology is derived. This is a new concept that needs to be further investigated and tested.

The digital intuition was first described by Launer et al. (2022) in connection with digital trust in virtual organization (Launer et al, 2022). In the later study, Launer and Cetin described this dimension with nine (9) different types of intuition adapted from the empirical study in Germany in 2022. The results are still under analysis and need to be published.

Result: Combined RIEMBSHUAPDT Approach

According to various theories and approaches from different fields, we combine or divide styles from different studies, add new styles which is not much mentioned before, and test styles for finding a comprehensive valid and reliable instrument. Therefore, the main purpose of this paper is to develop a new theory on rational and intuitive decision-making embracing variety of styles. For this purpose, fifteen types of rational and intuitive decision-making styles are recommended: *Analytic, Planning, Knowing, Holistic Unconscious, Spontaneous, Heuristic, Slow Unconscious, Emotions, Body Impulses, Moods, Anticipation, and Support by Others, Support by Technology, Creating Style and Digital Intuition.*

1. *Analytic* is a rational style with logical evaluation (GDMS), analytical and logical manner (REI), problem solving (PMPI), deliberative thinking on facts and details (PID).
2. *Planning* is a rational style associated with sequential, structured, conventional, planned confirmative, and systematic routines (CoSI, PID, USID).
3. *Knowing* is a rational style with understanding facts and details without the reasoning behind (REI, CoSI, USID).
4. *Holistic Unconscious* is an intuition style based on experiential ability in abstract terms or holistically in a Gestalt-like, non-analytical manner (CES, TIntS).
5. *Spontaneous* is an intuition style with a speed and efficient automated information processing (GDMS, PMPI, TIntS, USID).
6. Experienced-based *Heuristic* is an intuition style with an experience-based automated information processing (CEST, PMPI, TIntS, PID, USID).
7. *Slow Unconscious* is an intuition style with an unconscious reflection and activation develops in a period of time with distractions (Dijksterhuis, 2004).
8. *Emotions* is an intuition style relying on feelings (GDMS, REI, PMPI, TIntS, PID, USID).

9. *Body Impulses* is an intuition style based on feelings such as gut, heart, skin arousal, etc. (REI, PMPI, TIntS, PID, USID). Body impulses can be further researched in depth for additional body feelings (gut-brain-axis, somatic marker (Damasio, 1995), and other neurological connections.
10. *Moods* is an intuition style based on negative and positive versus active and activated and deactivated states according to the Affective Infusion Model (Forgas, 2001). This indicates a different information processing mode (Bolte et al, 2003).
11. *Anticipation* is an intuition style based on hunches and vibes (GDMS, REI, PMPI, TIntS, USID).
12. *Support from Others* is an intuitive style involving seeking advice and direction from others while experiencing a sense of whether the person is right or wrong (GDMS, REI).
13. *Creating Style*: based on the study by Cools and van den Breoek (CoSI, 2007)
14. *Support by Technology* as a new not confirmed yet style
15. *Digital Intuition* as a new not yet confirmed intuition style based on nine different types of intuition.

		CEST 1994 Epstein	GDMS 1995 Scott / Bruce	REI 1999 Pacini / Epstein	PMPI 1999 Burns / D'Zurilla	CoSI 2007 Cools / van den Broek	PID 2004 Betsch	TintS 2014 Pretz et al	USID 2015 Pachur / Spaar	2022 Launer / Svenson	2023 Launer & Cetin	2023 Launer
Rational	Analytical	Cognitive system	Rational: Analytical	Rational: Thinking	Rational Processing: Thinking fact-based		Deliberation / Analytical				Analytical	Analytical
	Knowing					Cognitive Knowing			Deliberation: Knowing		Knowing	Knowing
	Planning					Cognitive Planning	Deliberation / Planning		Deliberation: Planning		Planning	Planning
Intuition	Emotional		Intuition: Emotional / Feelings / Instincts	Experiential: Feelings / Instinct	Emotional processing: Feelings / Instincts		Intuition: Feelings	Affective: Feelings	Affective: Feeling	Clarification needed	Emotional	Emotional
	Body Impulses			Experiential: Gut Feeling / Heart	Emotional Processing: Gut Feeling		Intuition: Gut Feeling	Affective: Heart / Gut Feeling	Affective: Heart		Heart, Skin, Gut feeling	Heart, Skin, Gut feeling and others
	Mood Holistic							Holistic Abstract and Big Picture			Mood Holistic	Mood Holistic
	Spontaneous				Automatic Processing: Swift Decisions				Spontaneous		Spontaneous	Spontaneous
	Experience-based heuristics	Experiential: Associative, Automatic Learning			Automatic Processing: Experience		Intuition: Life experience, human understanding	Inferential: experience-based	Affective: Life experience, human understanding	Deeper understanding necessary	Heuristics	Heuristics
	Anticipation			Experiential: Hunches	Emotional Hunches			Affective: Hunches	Affective: Hunches	Deeper understanding necessary	Anticipation	Anticipation
	Dependent (Support by Others)		Dependent								Support by Others	Support by Others
	Unconscious Thoughts									Needs to be added	Slow Unconscious	Slow Unconscious
Other	Avoidant Creating		Avoidant			Creating						Creating
Neu	Support by Technology Digital Intuition											Support by Technology Digital Intuition

Limitations

Of the 15 introduced rational and intuitive decision-making styles, 12 dimensions are confirmed dimensions by Launer and Cetin (2021), Launer and Svenson (2022), and Launer and Cetin (2023).

Three dimensions need to be confirmed in future studies. Before, items have to be developed for empirical testing. It is not yet tested, if these additional dimensions are independent dimensions.

Conclusion

The study introduces an integrated and all-encompassing multidisciplinary structure aimed at understanding and measuring decision-making styles. The structure builds upon well-established and universally recognized research in the field. Encompassing a wide array of dimensions essential for both rational and intuitive decision-making processes, this framework presents 15 distinct dimensions that provide to these tendencies. Designed to be comprehensive, this framework can be applied across diverse decision-making situations within the extensive research field. Termed as the RIEMBSHUAPDT approach, it serves as a valid, reliable, practical, and economical assessment tool.

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