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Demystifying Intuition: What It Is, What It Does, and How It Does It

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~~Demystifying intuition~~

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Demystifying Intuition: What it is, What it Does, and How it Does it

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Keywords: Intuition, feelings, experiential system, rational system, automatic learning, intuitive wisdom, creativity.

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~~Running head: Demystifying intuition~~

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Abstract

~~**Demystifying Intuition: What it is, What it Does, and How it Does it**~~

Definitions of intuition are discussed, and two working definitions are proposed which are ~~.~~ ~~This is~~ followed by a list of eight unresolved problems concerning intuitions. It is suggested that all of these problems can be resolved by cognitive-experiential self-theory (CEST), a dual-process theory of personality according to which people process information ~~with~~ via two systems, an experiential/intuitive system that is an associative learning system that humans share with ~~other~~ many other animals and a uniquely human verbal reasoning system. Intuition is considered to be a sub-system of the experiential/intuitive system that operates by exactly the same principles and attributes but ~~consist of~~ has narrower content boundary conditions. The next section in this article includes a presentation of the most relevant aspects of CEST with an emphasis on the operating rules and attributes of the experiential/intuitive system. This is followed by a demonstration~~ing~~ on ~~-~~how the operation of the experiential/intuitive system can resolve each of the unresolved problems concerning intuition. The article closes with a comparison of the advantages and disadvantages of the experiential/intuitive and rational/analytical systems that reinforces CEST principles. It is concluded that neither system is generally superior to the other, as each has important advantages and disadvantages.

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~~Demystifying intuition 3~~

~~In order to understand a phenomenon such as intuition, it is helpful to begin with a definition of precisely what one wishes to understand. This article therefore begins with a discussion of definitions of intuition.~~

Demystifying Intuition: What It Is, What It Does, And How It Does It

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What is Intuition? How Should it be Defined?

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There are few phenomena in the history of psychology that have so many different definitions as intuition. In a survey by Abernathy and Hamm (1995), they identified 20 different definitions of intuition, and their list is hardly exhaustive. Although many psychologists agree that there is something important captured by the ~~construct~~ concept of intuition, there are others who doubt that intuition is a useful ~~construct~~ concept, and yet others who regard it as nothing more than a "lazy" or a "degraded form of analytic reasoning". Many a~~A~~uthorities, on intuition, not only disagree with each other, sometimes they even ~~disagree~~ oppose with their own construct of intuition. ~~themselves~~. The Nobel laureate, Herbert Simon, originally proposed one of the more influential views on intuition, that he referred to as "bounded rationality" (Simon, 1979, p. 501) and subsequently had self-conflicting views towards the end. Bounded rationality is a reduced form of deliberative reasoning that is sufficient for practical purposes and with view, ~~Consistent with this view,~~ Simon also defined intuition as "nothing more and nothing less than recognition", which was consistent (Simon, 1992, p. 155). Accordingly, he also believes there is nothing special about intuitive thinking that makes it qualitatively different from analytical reasoning. Yet, in marked ~~contrast~~ disparity to this view, Simon reports that he ~~can~~ could judge people's intelligence by the expression in their eyes and that he uses this insight to make recommendations for professional positions. He clearly reports, "I began thinking of the clear, dark, Armenian eyes of Arrow, the cool, clear, Frisian eyes of Koopmans, and the sharp, black

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Roman eyes of Modigliani. It was certainly true that they all had remarkable eyes. Ever since, I think I have included that among my own selection criteria; intelligence shines through the eyes" (cited in Hammond, 1996, p. 85). This behavior ~~implies~~ indicates that he implicitly believes in a form of intuition, that is based on the associations with past experience/encounter, and that is concretive and imagistic, ~~and~~ therefore qualitatively different from analytical reasoning rather than just a reduced form of instuition~~it.~~

It is noteworthy that most authorities define intuition, primarily, in terms of what it is not rather than in terms of what it is. Although ~~T~~they agree that it is a form of information processing that is different from analytical reasoning, but beyond that they have little or nothing to add to the definition. ~~As an~~ For example, the definition of intuition in Webster's Third New International Dictionary (Merriam, & Merriam, 1966) is, "coming to direct knowledge or certainty without reasoning or inferring." In a similar ~~vein~~ manner, Myers (2002), in agreement with the dictionary definition, defines intuition as "our capacity for direct knowledge, for immediate insight without observation or reason" (p. 1). Bruner (1961) defines it as "the intellectual technique of arriving at plausible but tentative conclusions without going through the analytic steps by which such formulations would be found to be valid or invalid conclusions" (p. 13). Hammond (1996) defines intuition as a "cognitive process that somehow produces an answer, solution, or idea without the use of a conscious, logically defensible step-by-step process" (p. 60**).** According to Hogarth (2001), the definition is followed as "the essence of intuition or intuitive responses is *that they are reached with little apparent effort, and typically without conscious awareness. They involve little or no conscious deliberation"* (original italics, p. 14). Apparently, the above authorities agree that intuition is some kind of information that is acquired without conscious, deliberative reasoning, but they do not essentially identify what it

actually is, in any substantive practical way. Thus, the challenge remains to help better define intuition or to indicate how it actually operates in different individuals.

In an attempt to somewhat to remedy the situation, I propose the following definitions of intuition: "Intuition involves a sense of knowing without knowing how one knows.", "Intuition involves a sense of knowing based on unconscious information processing." The first definition is depicts how laymanpeople tends to view how they he experiences intuition. Hence, iIt can therefore be considered a phenomenological definition of intuition. The previously reviewed definition is limited by describing partially what it is not, asits suggests not knowing how one is known. Like the definitions previously reviewed it is limited by defining intuition in part by what it is not, as it involves not knowing how one knows. The second definition avoids this problem starts by noting that the source of intuition is unconscious processing and hence broadening it without any bounds. However, although less limited bounded, this definition is still limited bounded to the context because it tells us nothing about the nature of the unconscious processing.

Where, then does this leave us? It leaves us with the view that intuition is a fuzzy construct and although a fuzzy understanding of intuition, while some of its definition are of some use descriptively, manythey are of them hold very limited value scientifically as they indicate nothing about the significance of its its the operation rather than other than the one definition that states intuition that is operates unconsciously without any limits, which several other definitions also imply. However, for in order to better advancing our understanding and in effort to define of intuition, we need to go beyond the a general recognition that intuition involves unconscious processing and further involve into discussion surrounding the importance of how the processing happens and what limits it. We need to know what purpose, if any, intuition serves and what its operating principles and processing attributes are. I believe that

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~~c~~Cognitive-Eexperiential Ss~~S~~elf-T~~t~~heory (CEST) ~~can provide such information~~can provide a information that could help better understand and define it from all realms. An interesting test of its ability to do so is whether it can resolve the eight unresolved problems concerning intuition that are presented below in the article.~~next.~~

Eight Unresolved Problems Regarding Intuition

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Problem 1: Establishing the Boundary Conditions of Intuition

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~~As part of explaining a phenomenon, I~~it is necessary to indicate what falls within the~~its~~ boundaries of phemonma and what lies outside of them in order to better explain it. To accomplish this, the various definitions of intuition that were based solely on the exclusion of analytical reasoning would have to necessarily include all non-analytic information~~-~~ processing within its boundaries and all analytic ~~information processing~~information processing outside of its boundaries, by ~~. Thus, they would have to~~ includinge irrational fears, superstitions, fundamentalist religious beliefs, esoteric beliefs such as extrasensory perception, learned psych-motor coordination, as in sport activities. Some authors do, in fact, ~~extend~~ define the construct of intuition in this manner ~~Demystifying intuition 6~~

(e.g., Hogarth, 2001; Myers, 2002), but it obviously is stretching the meaning of intuition well beyond its normal usage to include the bounds defined. This, of course, is not a scientifically acceptable reason for rejecting a definition, but it nevertheless raises the question of where reasonably to set the boundary conditions for intuition and how to regulate those bounds. Thus, ~~an issue~~ this problem ~~that~~ requires resolution ~~is the~~ to determin~~e~~ation ~~of~~ the boundary conditions of intuition.

Problem 2: Should Intuition be Restricted to Valid Beliefs?

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Some authors from the certain faction, require intuitive beliefs to be valid whereas others do not. ~~According to some of the definitions in~~ Webster's Third New International dictionary defines "direct insight into reality" and "quick and ready insight"(Merriam & Merriam, 1966)~~, intuition is "direct insight into reality," and "quick and ready insight," which~~ This implies that intuitive beliefs are valid, as invalid beliefs can hardly be regarded as insightful. Vaughan (1979) explicitly defines intuition as necessarily valid. If a belief is not valid according to Vaughan, it should not be regarded as intuitive atleast for not involving the beliefs. In contrast, Bruner (1961) believes intuitive knowledge is only tentative and thus form consistent construct with the definition itself~~.~~

Can the ~~belief~~ idea that intuitive beliefs must be true be dismissed as unreasonable? Not if it is a definition of intuition, for definitions can neither be true or false; they simply indicate the meaning a person assigns to a term for the purpose of communicating with precision. Therefore~~, there is nothing false about~~ a definition of intuition as a valid belief obtained outside of awareness is not a false one. Thus, a reasonable issue that remains to be resolved is whether such a definition is scientifically useful, which will be considered in understanding and defining the defining intuition and finding ~~the section on the~~ resolution to~~of~~ the eight problems concerning intuition.

Problem 3: Identifying the Operating Principles and Attributes of Intuitive Processing

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If intuition is to be understood, it is necessary to understand how it operates. Thus, a third important issue that requires resolution is the identification of the operating principles and

attributes of intuitive processing As will be seen, there are a variety of views regarding this issue. Which of these positions, if any, is correct, remains to be ~~determined.~~determined?

Problem 4: Is there a Source of Intuition that Identifies the Very Essence of Intuitive Processing and Can Account for its Other Attributes?

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~~**Processing and Can Account for its Other Attributes?**~~

According to Chen, ~~A~~all modern dual-process theories~~s~~ definitions begin with listing operating principles and attributes of their proposed intuitive-like systems, such as that the systems operates in a manner that is unconscious, rapid, effortless, and associative (~~e.g.,~~ Chen & Chaiken, 1999; Hammond, 1996; Kahneman, 2003; Petty & Wegener, 1999; Reber, 1993; Sloman, 1996; Smith & DeCoster, 2000; Stanovich & West, 2000; Strack & Deutsch, 2004). It is ~~not clear~~not indicative from their selection of operating principles and attributes whether the authors regard any of them as fundamental and the others as subordinate. However, t~~T~~heir position on this issue might~~ay~~ be indicated by the titles they assigned to their systems and the sets of principles. Thus, an issue to be resolved to understand and define intuition is ~~is~~ whether there is a single operating principle that is so fundamental and ~~that it can~~ can it be accountable for all the rules of processing intuitive behaviour.~~account for all the rules and attributes of intuitive processing.~~

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Problem 5: Is a Dual-process Theory Necessary to Account for Intuitive and Analytical Processing or or Can They be Accounted for by a Single Process?

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~~**Processing or or Can They be Accounted for by a Single Process?**~~

Some authors believe that it requires two qualitatively different processing systems to account for the differences between intuitive and analytic information processing (e.g., Chen & Chaiken, 1999; Epstein, 1973, 1994, 2003; Hogarth, 2001; Kahneman's (2003) revised view; Myers, 2002; Petty & Wegener, 1999; Sloman, 1996; Smith & DeCoster, 2000; Strack & Deutsch, 2004). Others, including Simon (1992), Kahneman, Slovic, & Tversky (1982), and Kruglansky, Thompson, and Spiegel (1999), believe that intuitive and analytical thinking are simply different levels of processing within a single system of reasoning. Thus, the fifth

problem to be resolved is whether two qualitatively different processing systems are necessary to account for the differences between intuitive and analytical information processing.

~~Demystifying intuition 8~~

Problem 6: How Important is the Role of Experience in Intuition?

Several authors (e.g., Betsch, 2008; Epstein, 1973, 2003; Hogarth, 2001; Simon, 1992) regarded, the ~~-~~experience as playing a vital role in intuitive processing. As previously noted, Simon regarded~~s~~ intuition as "nothing more nor nothing less than recognition" (Simon, 1992, p. 195). Recognition of reasoning, of course, requires recollection of previous experiences. However, Hammond (1996), ~~however,~~ takes exception to Simon's view as unnecessarily restrictive and ~~,~~ as he believes it excludes the most interesting aspects of intuition, such as ~~its~~ the consistent use of imagery, its consistent emphasis on case histories, and its contribution to creativity across different lines while processing experiences. Although some regard learning from experience as a most fundamental aspect of intuition, others do not consider it as sufficiently important to be worth mentioning. In the twenty definitions of intuition listed by Abernathy and Hamm (1995), ~~not one refers directly~~ to not one refers/provides insight directly experience, and only one does so indirectly by referring to pattern recognition.

It is noteworthy that comparisons of judgments based on experience and deliberative reasoning go back as far as the following statement by Aristotle:

> While young men become geometricians and mathematicians and wise in matters like these, it is thought that a young man of practical wisdom cannot be found. The cause is that such wisdom is concerned not only with universals but with particulars, which become familiar with experience, but a young man has no experience (cited in McKeon, 1947).

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Given the disagreement on the importance of experience regarding intuition, the role of experience in intuition obviously requires resolution to understand and formulate a definition of Intuition.

Problem 7: How Important is the Role of Affect/Emotion in Intuition?

~~Many~~ Most definitions of intuition are completely cognitive and ~~make no~~ don't mention any ~~of~~ emotions or affect. Among the twenty definitions of intuition in the survey by Abernathy and Hamm (1995), only one does.~~mentions feelings~~. In contrast to those who ~~make no mention~~ don't incdicate~~of~~ feelings, there are others who consider its

affects to be a fundamental aspect of intuition. Slovic and his colleagues (Slovic et al., 2002) identify what they refer to as an ~~affect~~ heuristic affect, according to which affect is a direct and important influence on intuitive thinking and is further agreed upon by~~. According to~~ Chen and Chaiken (1999), as the operation of intuitive processes and its extraction ~~may be revealed~~ by emotions. Others (e.g., Hayashi, 2001; Shapiro & Spence, 1997; Barnard, 1938; and Agor, 1989) use affective terms, such as "gut feelings," "gut instincts," and "feeling in our marrow" in describing intuitive thinking. Bastick (1982), regards intuition as "feelings which guide our common actions" (p. 2). Others authors who emphasize feelings as an ~~important~~ crucial aspect of intuition are deGroot, Gobet, and Jongman (1996), Schwartz (1990), and Westcott and Ranzoni (1963).

In summary, there is considerable disagreement about whether feelings are an important aspect of intuition and what are not~~. Accordingly~~ and hence~~,~~ an important issue to be resolved is the place of affect in intuition.

Problem 8: What are the Relative Advantages and Disadvantages of Expriential/Intuitive and Rational/Analytic Processing?

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and Rational/Analytic Processing?

Last, and perhaps most controversial, is the relative evaluation of the two systems. Among the twenty definitions, in the Abernathy and Hamm (1995) survey, intuition is viewed favorably by some and unfavorably by others and is subject to individual opinions. Included among the former are extreme statements such as "intuition is infallible," and more modest views that "intuitive cognition can outperform analysis." Included among the latter definitions, are statements that "intuition is just lazy thinking" and "intuition is the use of fallible heuristic strategies." Most authors (e.g., Chen & Chaiken, 1999; Hogarth, 2001; Myers, 2002; Nisbett & Ross, 1980; Petty & Wegener, 1999; Kahneman, Slovic,

& Tversky, 1982) acknowledge that intuition has important positive features, such as being rapid and effortless, but, on balance consider it to be often inaccurate and inferior to analytical reasoning. However, as will be seen later, there are a variety of desirable attributes not

considered by these authors in which intuitive processing plays a greater role than analytical processing. For now, it will suffice to identify the relative advantages and disadvantages pros and cons of experiential/intuitive and rational/analytic processing as and consider it an important issue that warrants further consideration.

Cognitive-Eexperiential Self-theory: A Dual-Process Theory that Provides an Explanation of Intuition

that Provides an Explanation of Intuition

According to Ceognitive-eExperiential self theorySelf-Theory (CEST) humans operate with two information-processing systems, an experiential system, which is an automatic, associative learning system and a rational/analytic system on the other hand , which that is a

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verbal reasoning system. These systems operate by different rules and have different attributes. Although, the experiential system encompasses a domain of more extensive beliefs than intuition (i.e., it also accounts for a variety of other kinds of non-analytical thinking and beliefs, including superstitious thinking, irrational fears, unusual beliefs, and fundamentalist religious beliefs), the operating rules and, attributes of intuitive processing are identical. aAccording to CEST with those that in the broader domain. However, to draw attention to the focus in this chapter on intuition, , I refer, in this article, to the system as the experiential/intuitive system, which elsewhere when considering its broader domain elsewhere in the subsection, I have referred to as the experiential system. However, tThe important point is that no matter which way I refer to it, the operating principles and attributes s are assumed to be identical, and the only difference is in the boundary conditions of their range of contenthosting the contents.

The experiential/intuitive system is the same system with which non-human animals have successfully adapted to their environments over millions of years of evolution. It is very likely more advanced in humans, with their larger brains, than in other primates, just as other primate's associative learning systems are more advanced than that of other animals. I named the system as an experiential system because its primary function is to learn from experience. It operates in a