

Intuition

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Abstract

In the past, the construct of intuition has been considered to be unreliable whereas purely analytical thinking was seen as the ideal form of human reasoning. This has changed.

Previous views on the construct of intuition deemed it unreliable and that purely analytical thinking was seen as the ideal/only form of human reasoning. However now there is increasing empirical evidence that intuitions can play a vital role in human adaptation. Intuitions are a non-deliberative mode of thinking, based on knowledge stored in long-term memory, mainly acquired via associative learning. When experiencing intuition, the input is processed automatically and without any form of conscious awareness from the individual. The output enables fast and affectively charged decision making, which is often expressed as a “gut feeling”, but cannot be explicitly articulated further than this. As a result of their fast and heuristic nature, intuitions can demonstrate their strength particularly in times of uncertainty,

Commented [EM1]: This sentence is contradictory – do you mean one set of researchers believed intuition to be considered as unreliable and the other set saw this as the ideal form of reasoning? The use of „whereas“ denotes that the two ideas conflict.

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complex environments and when under time pressures. Intuition is examined across various fields of application and enables the potential for successful decision making, although types and origins of intuitions as well as methodological issues are still debated.

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INTUITION

Definition:

Intuition is a non-deliberative mode of thinking, based on knowledge stored in long-term memory, mainly acquired via associative learning. The input is processed automatically, holistically and without conscious awareness. The output enables fast and affectively charged decision making, which is often expressed as a “gut feeling”, but can not be further explicitly articulated.

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It is necessary to distinguish intuitions from closely related terms such as instincts, insight, and reinvestment. Firstly, in contrast to instincts, intuitions are based on learned representations and not on evolutionary shaped responses. Secondly and in contrast to intuition, insights are achieved by conscious processes, i.e. by solving a mathematical problem which involves systematic reasoning. Finally, the construct of reinvestment is considered in relation to the motor component, the stable tendency of a person to manipulate explicit knowledge by working memory in order to control body movements during motor output, and for the cognitive component, the tendency to monitor decision processes and ruminate about past poor decisions. When drawing comparisons with intuition, reinvestment is not solely linked to cognition but also relates to the motor component and also has direct links to situations of stress. Research results suggest that deliberative persons have a higher reinvestment tendency than intuitive persons, thus suggesting an inverse relationship between reinvestment and intuition?

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Central theories:

The theoretical background of modern intuition research is mainly based on dual-processing? theories which aim to describe human information processing in terms of two distinct systems. These theories have evolved across many academic disciplines and applied fields and although they have differing names and labels they are structurally similar. Dual-process theories have a common structure which differentiates between one system that is characterized by its automaticity, non-consciousness and speed (usually referred to as reflexive or System 1) and a second, slower, conscious and deliberative system (usually referred to as reflective or System 2). Within the dual-process framework, intuition is considered to be part of System 1, which is also seen as associative and older in terms of evolutionary development. The majority of human cognition and behavior is assumed to build on a combination of the two systems. But there are still many debates between dual-process theorists which include: a clearly distinctive activation based on certain variables, a parallel processing and a firstly an automatic and secondly, only when necessary, a deliberative activation.

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Types of intuition:

Following the consideration that there are distinctive divisions within System 1, there is also the assumption that intuition itself is not a unitary construct. Therefore, initial classifications have been proposed to identify different types of intuitions. For example, Pretz (2011) proposed a model which differentiates between affective, holistic and inferential types of intuition.

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Attributes of intuition:

According to most conceptualizations, intuitions include the following four characteristics: Firstly, intuitions are considered to be non-conscious information processes that are consequently not directly observable nor explicitly accessible. Secondly, intuitions are experienced in a holistic manner which means they are built on non-serial overall heuristics and

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associations. This aspect underlines the strong relationship between intuitions with one's individual learning history. Thirdly, emotions seem to play an important role within intuitive judgments, which on the subjective level this is often expressed as a (gut) feeling. Furthermore, neuroscientific research showed activation patterns in affect-related brain areas during intuitive decision making, which suggests a link between intuition and affect. Finally, a key characteristic of intuitions is automaticity. In opposition to analytical and reflective cognition, the outcome of intuitions is easily and almost instantaneously accessible to the individual.

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Effectiveness of intuition:

A growing body of research has assessed which conditions intuitive decision making might be effective or even superior to deliberative judgments. In contrast to former conceptions, purely analytical thinking as the ideal form of human reasoning, there is increasing empirical evidence that intuitions can play a vital role in successful decision making. As a result of their fast and heuristic nature, intuitions can demonstrate their strength particularly in situations of uncertainty, in complex environments and under time pressure. These results are endorsed by various fields of research such as sports and management. Conversely, as they are based on learning processes, intuitions can also be misleading, i.e. in situations where the future may be significantly different from the past. Ultimately successful decisions may involve both intuitive and deliberative decision making which depend on various factors. One of these factors that received particular attention among scholars is expertise. Evidence suggests that intuitions tend to be relatively more effective when decision-makers have a high level of experience in a given domain. This could build up relevant and exact schemas which are mental structures categorizing information. Therefore it can be suggested that there is a U-shaped relationship between the availability of intuition and level of expertise. For example at the first stage of the relationship a novice's intuition relies on general and simple information processing which therefore promotes higher levels of intuition...?. In the next stage and with further learning,

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intuition becomes less available for the former novice because of the increase in rule-based knowledge. Finally, at the opposing end of the U, intuition becomes important again at the expert-level, as the former novice has acquired fluent domain-specific knowledge and substantial experience. This kind of expert-intuition is considered as qualitatively different to the first stage and is characterized by extensive domain-specific knowledge, pattern recognition and automaticity. Additionally to the level of expertise, research suggests that people differ **inter-individually** in their preferences to rely on intuitive judgments. **Intra-individually**, people tend to rely relatively more on intuitive judgments in situations of positive affect.

Methodology:

As a result of its unconscious nature empirical research on intuition has been rather limited. Researchers across a range of domains attempted to tackle this problem by developing a broad variety of very different methodological approaches and study designs. This aimed to access, describe and measure intuition and its occurrences and outcomes in order to gain a comprehensive understanding of the construct. In contrast to the relatively large consensus on the main features of intuition, there is less agreement on the best approaches to encapsulate the concept of intuition empirically. In part, the diverging views on methodological approaches might be rooted in the diversity of the academic fields involved in intuition research. In which the typically preferred methods differ across disciplines which may also shape the individual foci that the researchers lay on specific aspects and types of intuition. Key methods to assess intuition in laboratory and/or field based settings include: direct instruction, self-report questionnaires, retrospective reports, incubational methods, scenario-based, neurological and physiological approaches, and affective priming. When assessing different types of intuition researchers developed self-report instruments focusing on specific facets of the construct. For example, Pretz et al (2014) introduced the Types of Intuition Scale (TIntS) a self-report measure

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which assesses the individuals preferences for three types of intuition: holistic, inferential and affective.

Fields of application:

Comprehensive knowledge on how intuitions function and when they are useful carries great potential for successful decision making. As a result, the construct of intuition is examined across various contexts of application including; everyday-life, education, finance, sport and global politics. For example, intuition seems to play a crucial role in professional sports where both maximum performance under high pressure and automaticity are needed to enable fast reactions and efficient perception-action-emotion-cognition coupling are needed to produce successful performance. Also in sports, but not exclusively, there is increasing evidence for the take-the-first heuristic, which describes that when the individual has some expertise in the task, then the first intuitive option that “comes to mind” is usually the best one and any further generated option decreases in quality. In general research on intuition is not limited to a specific domain but it is rather a global construct which can be applied to numerous contexts and fields of research. On the other hand, expert-intuition acquired in one specific domain, i.e. in tennis, is not considered to be automatically transferable to another domain, i.e. to handball or management decisions, which highlights the need for specific training and experience in a specific domain to develop one’s intuition in this particular domain.

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Critical review:

In the past, the construct of intuition had been considered as unreliable, unscientific, and sometimes even as spiritual hocus-pocus. In recent years, the construct has received increasing attention among scholars across many disciplines. To examine how intuitions work and to learn about their strengths and weaknesses has been the target of intensive studies. By now, there is general consensus on the importance of intuition in human decision making, the main features of the construct and the need for broad research on intuition . ~However there is conflict

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surrounding methodological approach to intuition research. The common study designs, for example self-report questionnaires, might not be sufficient as it seems debatable whether a cognitive process that is considered as rapid and without conscious awareness can be measured in this way.. Similarly, brain mapping might not be enough as other physiological factors are presumed to influence intuition as well, such as skin conductance and heart rate variability. Despite the recent advancements methodological approaches i.e. through more sophisticated designs, mixed-method approaches and by assessing types of intuition, the measurement of the construct remains one of the biggest weaknesses in current research. However the latest research from cognitive psychology examining the take-the-first heuristic has proven itself as a good starting point in terms of a clear operationalization of intuition that can be further connected to brain, physiological, and self-report measures.

Outlook for future research:

Future research can aim to build on the convergent understanding of intuition, follow previous findings on the importance of the construct and the potential benefits of intuitive decision making. A poignant starting point for researchers would be to clarify the definition and terms of intuition as this is currently still an issue within research. In order to address this issue, the wording proposed above provides a clear definition of intuition and may serve as a common working basis for future research. Nevertheless, it seems crucial to proceed with the different types of intuition in order to enable comprehensive research findings on the topic. It could be suggested that the biggest challenge still remains at the methodological level, with the measurement of intuition which is essential to underpin the construct. Therefore, further methodological insight is clearly demanded in order to..... Additionally, future studies should focus on the identification of different types of intuition in order to gain a deeper understanding of the underlying processes. In summary, research and knowledge on intuition carries great

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potential for a variety of applications and could really make a difference on the way to successful decision making.

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Just a thought :)

See also:

Unconscious processes

Cognitive correlations of achievement

Emotional Competence

Impulsivity

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Further readings:

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