London South Bank University

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Understanding and trusting your intuition: New lessons from psychological research

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Introduction

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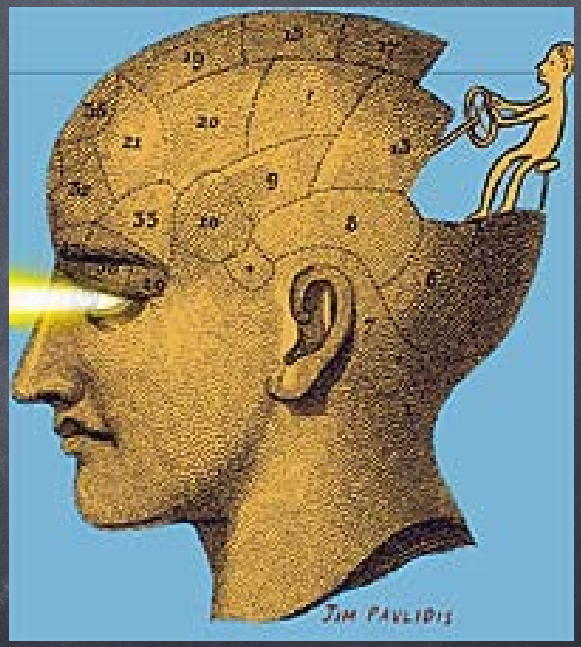
2. How do we develop intuitive expertise?
3. Should we trust our emotions?
4. When should we trust our intuition?



What is intuition?

What is intuition?

“Intuition… isn’t that all a bit…. you know, Mystic Meg?” (Team Manager).

What is intuition?

Nobel Laureate Herbert Simon (1992) provides a classic definition of intuition:

> *'The situation has provided the cue; this cue has given the expert access to information stored in memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition' (Simon, 1992, p. 155).*

Instead of seeing intuition as magical, this definition suggests that each of us performs feats of intuitive expertise several times a day, e.g., detecting emotion in the first word of a telephone conversation with a loved one (Kahneman, 2011).

Intuitive versus analytical reasoning

There has been a long tradition of dividing our reasoning into intuitive reasoning (gut feelings, practice wisdom) and analytical reasoning (formal processes, structural instruments, research findings).

This is mirrored in the long debates about whether social work is an art (England, 1986) or a science (Sheldon, 2000).

More recent findings in cognitive psychology and neuroscience now suggest that this is a false dichotomy based on a misunderstanding. Rather than being competing alternatives, they are simply halves of an interactive system.

The dual process model

- System 1 (intuitive thinking) operates automatically and quickly, with little or no effort and no sense of voluntary control.
- System 2 (analytical thinking) allocates attention to the effortful mental activities that demand it, including complex computations. (Kahneman, 2011).
- But how do they work in practice?

System 1 (intuitive thinking)

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System 2 (analytical thinking)

17 x 24 = ?

System 2

System 2 (analytic reasoning) is controlled, effortful and analytical and is able to undertake complex computations that require considerable exertion. For example, we use system 2 thinking to work out complex arithmetical calculations and other rule-based problems. The mathematician Alfred North Whitehead describes such operations of thought as

> *'like cavalry charges in battle - they are strictly limited in number, they require fresh horses and must only be made at decisive moments'* (Whitehead, 1911, p.61).

System 1 and 2

In everyday situations where judgement problems arise, System 1 provides intuitive answers that are rapid and associative.

The quality of these proposals is monitored by System 2, which applies rules and uses deduction to endorse, correct or override them (Kahneman and Frederick, 2002; Kahneman, 2011).

If the proposals are accepted without significant revision, it is likely that we will regard them as intuitive.

Whilst System 1 processes characterise the majority of our everyday thinking, our sense of agency, choice and identity is associated with System 2 (Kahneman, 2011).


I MISS HER

But what's that got to do with social work?

Practitioner 1: '*Dad looked furious with Mum for how she answered that question! Do we have any history of him being aggressive to her? Is he trying to hide something?*

Practitioner 2: '*I didn't get that feeling, I thought Dad looked frustrated with your question rather than angry with Mum'.*

Team leader 1: *'There are a number of issues we need to think about. How does the couple manage conflict? Is there a pattern of him being controlling? Does it fit with what we think is going on with the family?*' (Sycamore service, day nine).

	System 1	System 2
Practitioner 1	‘*Dad looked furious with Mum for how she answered that question!*	*Do we have any history of him being aggressive to her? Is he trying to hide something?*
Practitioner 2	‘*I didn’t get that feeling, I thought Dad looked frustrated with your question rather than angry with Mum’.*	
Team leader 1		*‘There are a number of issues we need to think about. How does the couple manage conflict? Is there a pattern of him being controlling? Does it fit with what we think is going on with the family?’*

Should we trust our emotions?

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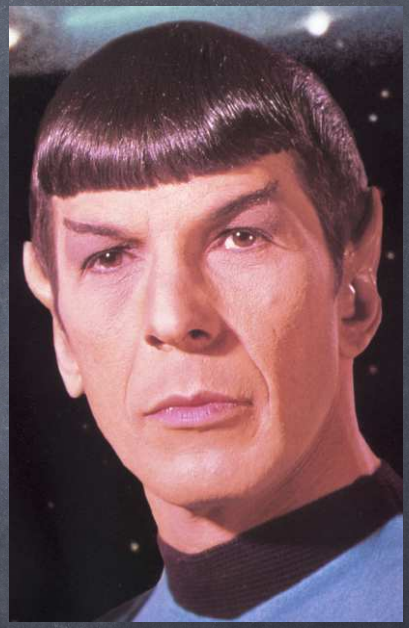
We tend to view emotion as a contaminant, as 'sand in the decision machinery' (Muramatsu and Hanoch (2005, p.202).

This view has been challenged by the work of Antonio Damasio, a neuroscientist and consultant neurologist.

Whilst there has always been clear evidence that strong emotions can impair our judgment and lead to rash decisions, Damasio's work provides evidence that judgment that is devoid of emotion is also poor.

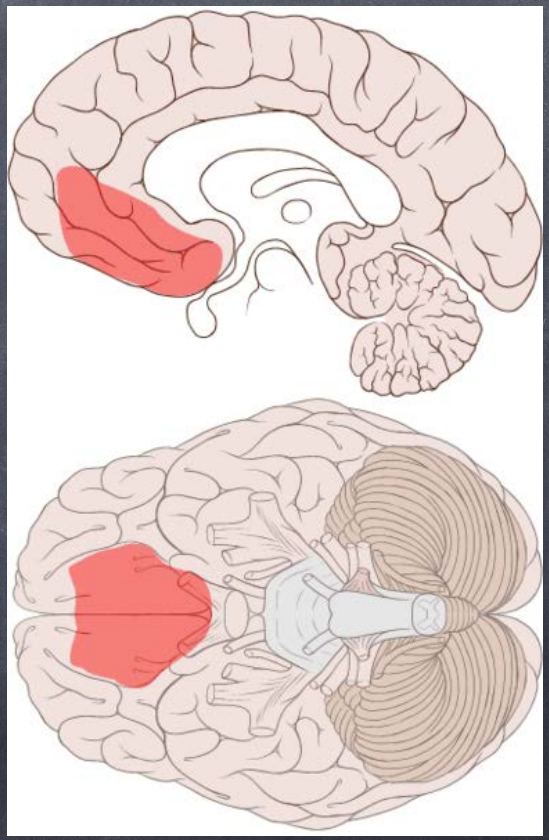


How emotions make us smarter

Within the brain, somatic markers are thought to be processed in the ventromedial prefrontal cortex (VMPC).

When we have to make complex decisions, somatic markers produce an emotional response unconsciously via the brainstem or consciously in neocortex cognitive processing.

The ventromedial prefrontal cortex is an essential component and supporting evidence for this theory is provided the Iowa gambling task.



Iowa Gambling Test

Iowa Gambling Test

- In the control group, participants started having explicit ‘hunches’ after 50 turns and had worked out the underlying lesson by about the 80th turn. However, skin conductance measurement indicated that participants developed an anxiety response to choosing cards from decks A and B after the tenth turn, forty turns before they were able to articulate why.

- In the group with VMPC damage (but no cognitive impairment), participants did not appear to learn the underlying lesson. Although most developed correct hunches, they continued to take cards from decks A and B. Skin conductance measurement found no emotional response at any point.

Can emotions make us smarter?

When we face complex and conflicting choices, we may be unable to decide using only cognitive processes, which become overloaded.

Damasio (2006) argues that in these situations, somatic markers (emotional markers on experience) can help decide.

Damasio proposes that somatic markers direct attention towards more advantageous options, simplifying the decision process.

How do we develop intuitive expertise?

What is intuitive expertise?

Intuitive expertise occurs when an expert draws upon their repertoire of experience to recognise cues in a situation that enable them to spot patterns and build a narrative about that situation.

But what does that look like in practice?

“The manager was working through the referrals that had been received. The first referral was from a school who were concerned about a 9-year-old boy. She said, “*It says that he’s got poor school attendance, he’s got an ‘unkempt appearance’ whatever that means, and he seems ‘preoccupied’ with his mother, who’s a single parent. I see that and immediately think…*

… has mum got mental health problems? If so, he's worried about her, doesn't want to be away from her so he's not attending school properly and she's not able to look after him day to day so he's 'unkempt'. It could be something else but it's worth looking out for" (Day two, City teams).

How do we develop intuitive expertise?

As practitioners became more experienced, the reasoning processes that they used tended to pass through three phases:

1. Less experienced phase (less than 12-18 months experience).

2. Experienced phase (between 12-18 months and 5-6 years of experience).

3. Highly experienced phase (more than 5-6 years of experience).

Phase 1: Less experienced stage (less than 12-18 months experience)

Less experienced practitioners were less likely to critically evaluate information or challenge other professionals

'I would say that at the beginning of the 14- or 15-month period, I would have tended to see the information that was given to me by another professional in a referral or information that was held on the system and tend to take that as.. I would have given more weight to that than I would necessarily have given to what the family said, if they were saying something different. That was my inexperience at the time, I guess' (Amy, experienced practitioner, interview one, City teams).

'I'm a lot more confident now to challenge a case as to where it should go because I've been here just under two years now but in my first year and a half, you pretty much just did what they told you to do…' (Areta, experienced practitioner, interview two, City teams).

Phase 1: Less experienced stage (less than 12-18 months experience)

Less experienced practitioners were more likely to become cognitively overloaded by information that they found difficult to integrate:

> *'But it was difficult to … there were so many interplaying factors that affected how available mum and dad were to give the sort of parenting that they needed to. It was difficult for me to form an overall analysis… I felt quite bogged down with all the information that I had by the time it got to doing the Conference report. I think I could make sense, I think, of most things in isolation…*' (Amy, experienced practitioner, interview one, City teams).

Phase 2: Experienced stage (between 12-18 months and 5-6 years)

As practitioners moved into the next stage of the 'experienced practitioner', they tended to find extensive information less overwhelming because they had learnt to selectively focus rather than regarded all information as equally important:

> *'I think sometimes in the past, when I was newly qualified, there were a million questions in that referral that you needed to ask the family, which gives you the picture. Where now I.. ask them every relevant question… I'm confident I have mastered every area that I need to to find out information from the family. .. My manager was quite happy, she said, "Every question that comes into my mind, you've asked them*' (Kadin, highly experienced practitioner, interview five, City teams)

Phase 2: Highly experienced stage (more than 5-6 years of experience)

This is consistent with previous studies of how novices and experts view information differently.

In a study of professional judgment, experienced auditors and student auditors were given extensive information (Ettenson et al., 1987). Whilst the students tried to integrate all of the information and no single cue was dominant, the experienced auditors focused upon a smaller range of information sources.

The experienced auditors demonstrated higher levels of accuracy, consistency and consensus.

Phase 2: Experienced stage (between 12-18 months and 5-6 years)

Experienced practitioners had greater ability to spot gaps in information:

'I think that obviously the more experienced worker would be able to look at the referral, see the information and maybe identify what the concerns and risks are and maybe gaps in information actually. Information that's not there, whether it's a full referral or inappropriate referral, might have to go back to the referrer to get more information as a starting point' (Nancy, highly experienced practitioner/manager, interview fifteen, City teams).

Phase 3: Highly experienced stage (more than 5-6 years of experience)

Rather than focusing upon specific risk factors in isolation, highly experienced practitioners described understanding these in the wider context of the individual family.

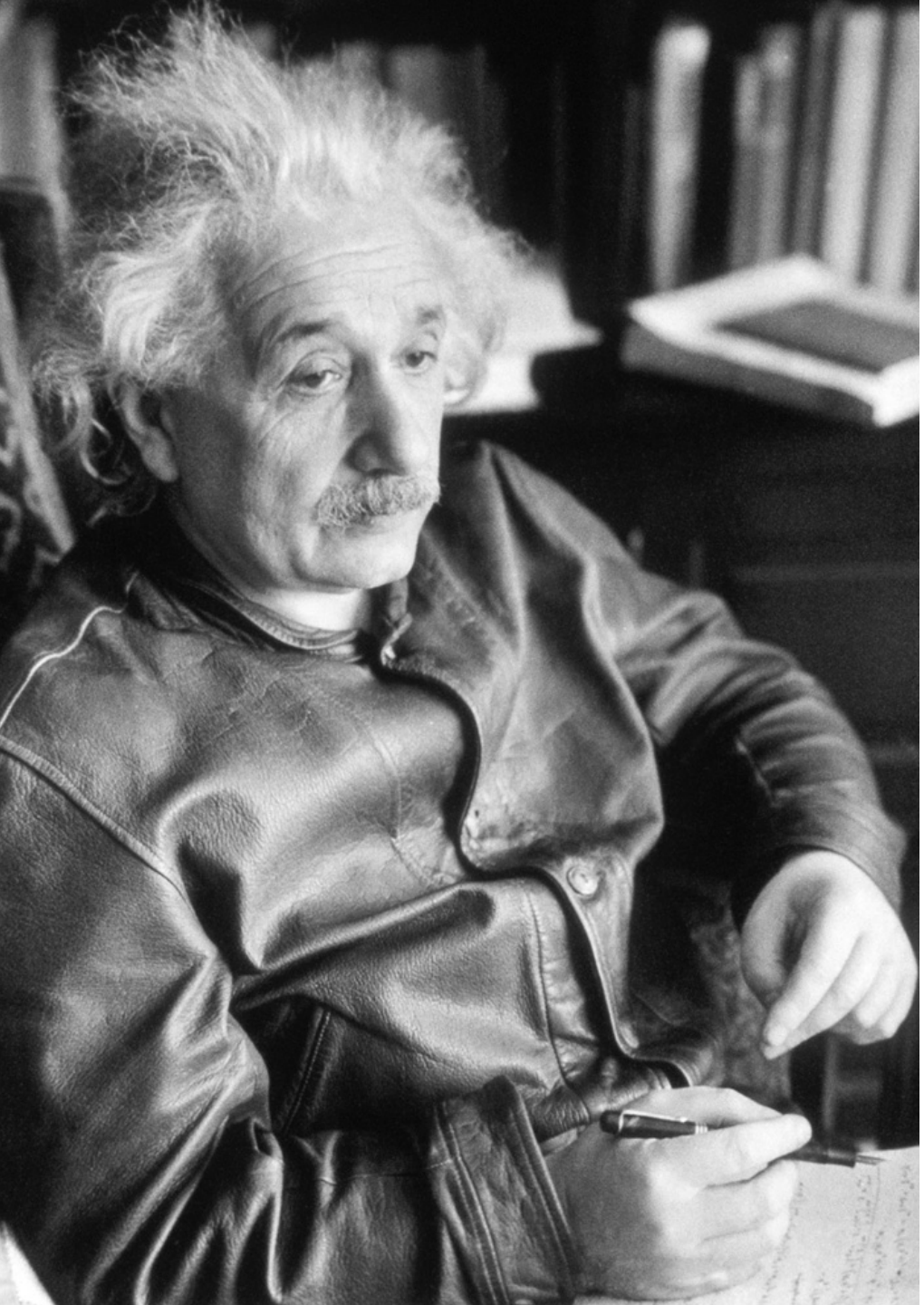
They were more likely to use an approach that goes beyond simply identifying individual risk factors to integrate more nuanced intuitive pattern recognition skills with formal analytic knowledge about how specific risk factors can interact:

> *'In my mind, domestic violence in family A may have a completely different impact on the child than in family B. Or it might be extremely dangerous in family C, depending on, you know, experience tells us when you have the combination of domestic violence, substance misuse and mental health, those are the most dangerous of cases that you can have'* (John, clinical associate and highly experienced practitioner, interview 21, Sycamore service).

Discussion

- Although the level of experience generally had a consistent effect on practitioners' sense-making skills, it was not simply the case that “experience = expertise”.
- In the experienced practitioner category, there was one participant out of 9 and in the highly experienced practitioner category, there was one out of 10 that did not have the characteristic features of that experience level.
- Whilst experience did not guarantee expertise entirely, inexperienced workers were much less likely to demonstrate strong pattern recognition and story building skills because such skills required a repertoire of previous experiences to draw upon.

When should we trust our intuition?



"The intuitive mind is a sacred gift and the rational mind is a faithful servant. We have created a society that honours the servant and has forgotten the gift”

Albert Einstein

Confidence is a poor predictor of accuracy

- The level of confidence that a person has in a particular intuitive judgment is a poor predictor of whether it is accurate.
- Less experienced practitioners are more prone to overconfidence because limited experience can make practitioners prematurely confident in their pattern spotting skills.
- Greater experience leads practitioners to be more measured in their confidence, particularly in situations that they know are too complex to predict.

When should we trust our intuition?

Disciplined intuition is about using your intuition in a wise way – acknowledging that it is a gift that has limitations that you must know and respect.

There are two conditions for intuitive expertise

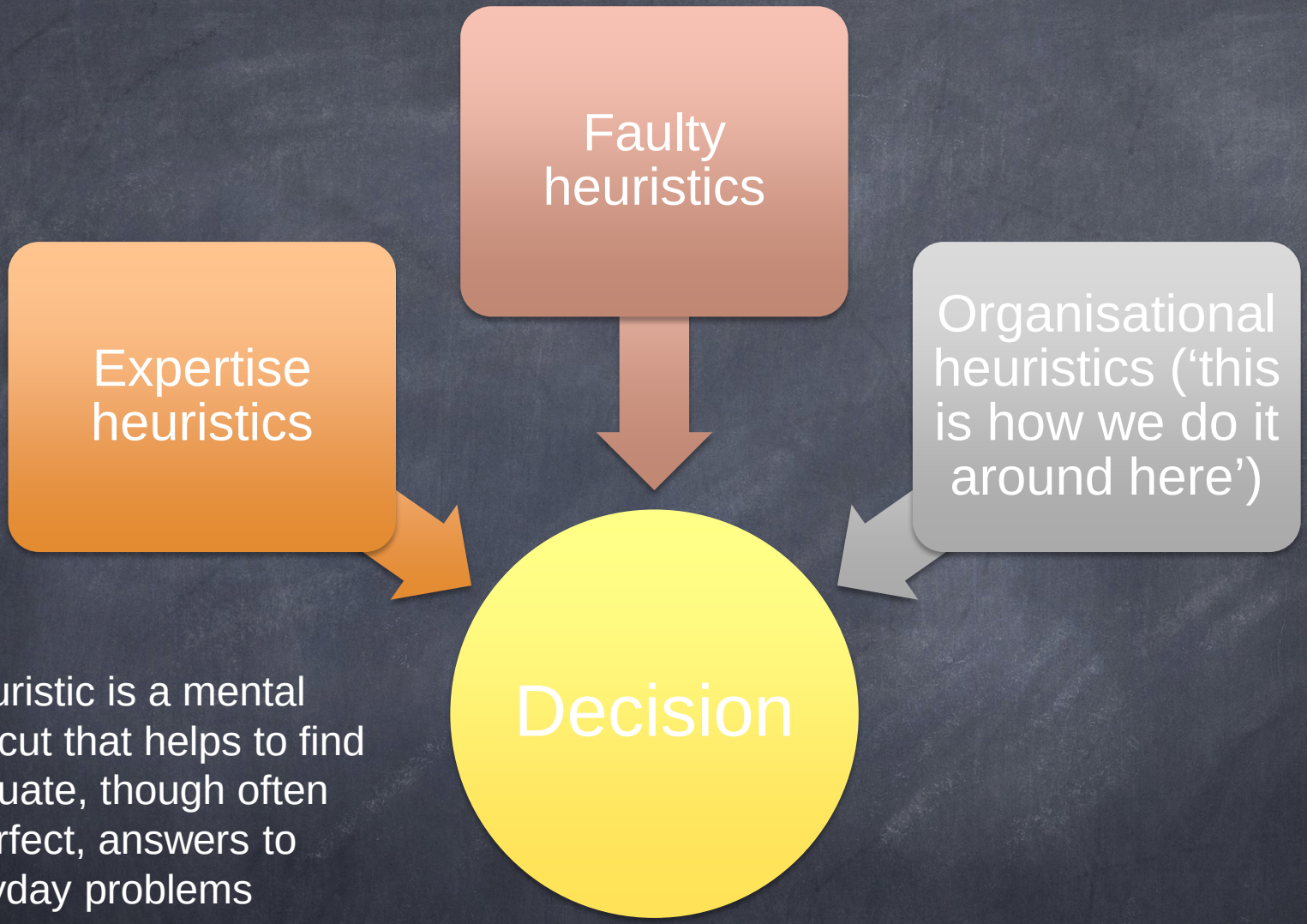
Condition 1: Is it as an area where there is enough regularities to make prediction possible, e.g., stock markets are simply too volatile for reliable prediction to be possible. Some areas of social work are similar, e.g. predicting whether someone is lying.

Condition 2: Do you have enough previous experience in this field to make your judgements reliable?

The third question

If the first two conditions are met, the third question is – where does my intuitive judgment come from?

Does it come from my experience or from another source?



A heuristic is a mental shortcut that helps to find adequate, though often imperfect, answers to everyday problems

Faulty heuristics

Kahneman (2011) argues that we are prone to systematic errors through faulty heuristics. For example,

- Confirmation bias
- The availability heuristic

The availability heuristic

The availability heuristic states that people will estimate the frequency or probability of an event by how easy it is to bring instances to mind (Slovic, Fischhoff and Lichtenstein, 1977).

This is prone to error because we find it easier to remember some events compared to others and mass media means that we have uneven exposure to events, e.g., are we more likely to die as a result of a plane crash or being kicked by a donkey?

Sharks save lives!

A striking example of availability bias is the fact that sharks save the lives of swimmers. An analysis of deaths in the ocean near San Diego shows that on average, the death of each swimmer killed by a shark saves the lives of ten others.

Every time a swimmer is killed, the number of deaths by drowning goes down for a few years and then returns to the normal level. The effect occurs because reports of death by shark attack are remembered more vividly than reports of drownings.

System 1 is strongly biased, paying more prompt attention to sharks than to riptides that occur more frequently and may be equally lethal

Summary

When we are unsure whether to trust our intuition, we need to ask ourselves three questions:

- Is this a situation that can be predicted? Or is it so complex that prediction is impossible?
- Do I have enough experience to be able to draw upon to inform my intuition?
- Does my decision come from my experience (expert heuristics)? Or does it come from faulty heuristics or organisational heuristics (‘this is how we do it round here?’)

In conclusion, a disciplined intuition approach means that intuition is a good place to start from, but a bad place to finish (Munro, 2008).

And finally, what's next?

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merton

‘Seeing through expert eyes’ study

- The British Academy and Leverhulme Trust have provided a research grant for a randomized controlled trial to test whether final year social work students can learn to see through the eyes of experts.
- Two groups of students will assess child protection referrals based on real life cases. The control group will receive nothing, whilst the intervention group will be given rapid and intensive pre-recorded video feedback from a panel of expert practitioners.
- It is an educational method that has been successfully used by the New York Fire Department and the US Marines.
- It is a partnership between LSBU, Professor Donald Forrester (Cardiff University) and the London Borough of Merton.
- Please join the Expert Decision Making Network if you want to hear more.

References

DeGroot, A.D. (1978) *Thought and choice in chess*. The Hague: Mouton. (Original work published 1946).

Kirkman, E. and Melrose, K. (2014) *Clinical Judgement and Decision-Making in Children's Social Work: An Analysis of the 'Front Door' System (Research Report DFE 323)*. London: The Behavioural Insights Team, Department for Education.

Klein, G. (1999) Sources of power: How people make decisions. Cambridge, MA: MIT Press.

Klein, G. (2004) *The power of intuition*. New York: Doubleday.

Munro, E. (1999) Common errors of reasoning in child protection work*. Child Abuse & Neglect.* 23 (8), 745–758.

Munro, E. (2008) *Effective child protection.* 2nd edition. London: Sage Publications.

Saltiel, D. (2015) *Observing Front Line Decision Making in Child Protection*. British Journal of Social Work, doi:10.1093/bjsw/bcv112.

References

Sheppard, M. (1995) ‘Social work, social science and practice wisdom’, British Journal of SocialWork, vol. 25, pp. 265–293

Simon, H. (1992) ‘What is an “explanation” of behaviour?’, *Psychological Science* 3(3), pp. 150–161.

Stanovich, K.E. and West, R.F. (2000) ‘Individual differences in reasoning: Implications for the rationality debate?’, *Behavioral and Brain Sciences,* 23(5), pp. 645–726.

Taylor, B. J. (2012) Models for professional judgement in social work, *European Journal of Social Work,* 15 (4), 546–562.

Taylor B.J. (in press) Heuristics in professional judgement: A psycho-social rationality model, *British Journal of Social Work*. DOI 10.1093/bjsw/bcw084.

van de Luitgaarden, G. M. J. (2009) Evidence-based practice in social work: Lessons from judgment and decision-making theory, *British Journal of Social Work,* 39 (2), 243–260.