

Defining and capturing deliberated preferences

Olivier Cailloux

LAMSADE, Université Paris-Dauphine

18th December, 2018

<https://github.com/oliviercailloux/quick-deliberated>

Why? For taking considered decisions

Help Decision Maker (DM) take considered decisions

- Which site for a nuclear plant?
- Which smartphone should I buy?
- Which voting rule should we implement?

My main interest is in analyzing such situations abstractly and generally

What? Deliberated preferences

Intuitive preference

- Preference as an “immediate sensation” [von Neumann and Morgenstern, 1944]
- i knows what's best by introspection
- Recommend a movie: i knows how good it feels
- “There is, of course, an important sense in which preferences, being entirely subjective, cannot be in error” [Savage, 1972]

Deliberated preference

- ... “but in a different, more subtle sense they can be.”
- Learn (think) more then change your mind
- Relates to “slow thinking” [Kahneman, 2013]

I want to define precisely and analyze deliberated preferences

How? Axiomatic analysis and argumentation

	aspect 1	aspect 2	aspect 3	aspect 4	
a	7	10	7	—	
b	1.5	5	1	--	
c	7.5	2	5	+	
d	2.5	3	3	++	
					$\xrightarrow{f} a > b$

- A family of aggregators \mathcal{F}
 - P_1, P_2 : properties of aggregators (Pareto-Dominance, Sure thing principle, Condorcet. . .)
 - Explain to the DM: if P , then $a > b$
- Argue: $a > b$, otherwise $\neg P$

Enables

- Test axioms
- Compare aggregators empirically

Thank you for your attention!

References I

- D. Kahneman. *Thinking, fast and slow*. Farrar, Straus and Giroux, New York, 2013. ISBN 978-0-374-53355-7.
- L. J. Savage. *The foundations of statistics*. Dover Publications, New York, second revised edition, 1972. ISBN 978-0-486-62349-8.
- J. von Neumann and O. Morgenstern. *Theory of games and economic behavior*. Princeton university press, 1944.