

Some questions and alternative hypotheses about the direction of thought from belief to action choice or *vice versa*

– some initial thoughts

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Background

Coherency models of belief and decision-making tend to be less directional than those of traditional inference (e.g. [1], [2]). That is, whilst traditional inferential accounts will trace a chain of reasoning from beliefs about the world to decisions about which action to take, coherence models equally allow for the opposite direction – from what individuals do (or want to do) to what they believe (I will call the former ‘reasoning forwards’ and the latter ‘reasoning backwards’ even if neither involve much ‘logic’ or ‘reasoning’ in a traditional sense). However, these accounts are less clear about why this sometimes happens one way and sometimes the other. This is the question that is focussed upon here.

This is politically important, because it is often assumed that public reasoning is (or should be) based on forward reasoning, when backwards reasoning is also involved. Consider some examples. In the debate about climate change it is assumed that a scientific consensus on the facts (e.g. as determined by the IPCC) should lead policy-makers to infer what action is needed – that is, a forwards reasoning model of policy making is assumed. However, it may be that other ways might be better in getting to an effective political consensus. To take another example, a populist politician, may give support to some popular feeling (e.g. normal people are being ignored), by providing beliefs that would justify this (e.g. the media is part of an elite who act to further their own interests) and thus give people ‘permission’ to express that feeling (e.g. by voting for them). On a more personal level, one might be more receptive to negative stories about a certain group of people, if one feels threatened by them – even if that feeling was caused by nothing more than unfamiliarity or uncertainty (e.g. believing that a group of aggressively dressed teenagers that congregate in a bus station are taking drugs).

A better understanding of this question might lead to a better structuring of political debate – one that came to better collective decisions, both in the sense of better choices (e.g. as considered in retrospect, years later) but also so that more people feel their voice has been effective in the process.

The Question

Why do people sometimes pick their actions on the basis of their beliefs and sometimes pick their beliefs in terms of their actions (desired or realised)?

Note that this is a different question from whether people come to the conclusion that is different from what others (or society) would prefer. In the case of vaccination, it is in the interest of society for over 95% of people to immunised to prevent epidemics of measles, but one gets much the same benefit if one is part of the less than 5% that are not. Given that there is some distress and inconvenience involved in the vaccination process, individuals might rationally decide not to immunise. Individuals are right to infer that their children (especially in rich countries with effective health services) are at very little risk. This lack of risk may well lead some to ignore the social imperative – this uses forwards reasoning, albeit for selfish reasons.

However, there is potential confusion here, due to the difference between the processes involved in the original decision making and subsequent social justification of that decision. Regardless of how one comes to a decision, one can often be under a social obligation to justify that decision in socially acceptable terms (e.g. using the form of a forwards justification and by not going against salient social norms). Thus the reported reasons and the actually reasoning might be very different. In the case of people who choose not to vaccinate their children for selfish reasons, there will still be social pressure on these people. In this case, they

may choose to justify their decision by claiming to doubt the evidence on vaccination (or come to accept doubt about this evidence) because it makes the social justification of their actions easier (which is a kind of backwards inference in order to produce a socially acceptable forwards account). Thus self-reports about how one comes to a decision might be reformulated into a different form making it harder to distinguish when each kind of reasoning is used. This is further complicated by our tendency to believe our own justifications¹, even if our original reasoning was not so clear.

Some Possible Explanations

There are a number of alternative hypotheses to explain such directionality, including:

- 1. Motivation.** When people are seriously worried about the consequences of their actions – that is, they perceive a serious risk about getting it ‘wrong’ – then they reason forwards and if not they may reason backwards. In other words, they are balancing the perceived risk against the desirability of the action (though maybe unconsciously).
For example, a patient may accept an unpleasant treatment from a doctor because they are afraid of the immediate consequences of not doing so, but if the consequences are difficult to imagine (as in not vaccinating for measles) then one may choose to avoid the unpleasantness (hurting one’s child).
- 2. Innate differences.** Some people tend to use the forwards methods and others the backwards. This might be a genetically-determined propensity or due to upbringing.
For example, those brought up in a strict framework with authority and certainties about certain things, then one might change belief on evidence less than someone brought up in a spirit of openness and exploration. An unwillingness to revise one’s beliefs might lead one to dismiss or ignore evidence that contradicts these beliefs.
- 3. Social pressure as to how to reason.** If all the others around one reason one way about a certain topic then one tends to do the same.
For example, scientists might tend to reason forwards (or at least reformulate public reasoning into this form) due to it being the social norm among other scientists, but in a tightly-knit social group the norm might be to reason backwards from their shared desired goal to what is believed.
- 4. Social justification of choice.** Under this hypothesis, people do use forwards reasoning to make decisions (actions where they are genuinely considering between different choices) but then tend to adopt beliefs that make the social justification of that choice easier (backwards reasoning). This may not be conscious, one may make a choice on the basis of suggestion, habit or unconscious bias, but then invent a justification of that choice if asked, and then *believe their own justification*.
For example, one may use forward reasoning to not vaccinate one’s child but justify this selfish decision by doubting evidence as to its dangers.
- 5. Tribal politics.** When the interests of group to which one belongs to (or identifies with) is under threat then actions and beliefs are chosen that support the group, even if that involves apparently strange beliefs.
For example, a doctor may be seen as impartial to any politics and thus trusted, but if they are perceived as politically involved (e.g. part of an elite) then they may be disbelieved.
- 6. Distrust in reasoning.** One might simply feel free of the social obligation to reason forwards, so are able to please oneself as to what to believe or do.
For example, if one’s faith in politics has been shaken by corruption scandals, then one might choose to disbelieve any argument they present and instead choose what is most comforting to themselves (e.g. climate change is a hoax).

¹ Piaget: “How do I know what I think, until I hear what I say?”

7. **Emotion.** This is the idea that reasoning forwards happens when one is cool, but that backwards reasoning may be 'triggered' by strong emotion or that a strong emotional commitment to an action cause one to dismiss some evidence [1].
For example, when in love with a person one might not notice things that indicate they are not well intentioned.
8. **Flawed reasoning.** Apparent backwards reasoning might be simply a result of biased or otherwise poor reasoning. Thus one might wrongly assume that the characteristics of all members of a group are the same as an individual member, or that because $A \rightarrow B$ then $B \rightarrow A$ (e.g. all corrupt are in positions of power therefore all in such positions are corrupt).
For example, that all Muslims should be treated with suspicion because a few Muslims are terrorists (but not conclude the same about white US citizens despite the fact that a large number of them shoot other citizens).

How might we go about answering this question?

In seeking to understand this, one should be very careful in letting beliefs about what is the *right* way of reasoning get in the way of good observation and theorising. Another difficulty is in distinguishing between these in terms of evidence – the results of many of these would be observationally indistinguishable in many circumstances. There seem to be at least two different (but synergistic) approaches: empirical and theoretical.

Empirical

One might seek evidence that distinguishes between the above hypotheses in different kinds of situation. This might either be analysis of available data (e.g. observational or 'big' data) or via the design of controlled experiments. There are experiments that show that people's explanation of action choice can be different from the decision making process, by showing how one can systematically influence decisions in ways that the subjects are unaware. Similar experiments might cleverly distinguish between the above in similar ways. *If* one has access to evidence about the private process that individuals use to come to decisions, this might be contrasted with social justification of the same decisions, but this can be difficult to come by and even harder to check that subjects did not secretly have in mind its public acceptability.

Theoretical

These empirical approaches presume that we know how the different hypotheses might manifest themselves in terms of observable evidence, so that we are clear as to what we are looking for. This is not easy, since (as already observed) in such decision making, the individual and the social are intertwined. Thus one might come to believe a justification that one was under social pressure to produce – or, to put it another way, fitting in with a group is a legitimate goal even if this involves changing ones beliefs.

Agent-based modelling allows for both cognitive and social processes to be formally represented, capturing some of the behavioural complexity we observe. The above hypotheses could be implemented as alternatives within a simulation and then the results compared given different kinds of situation for the agents. Clearly this would be more effective if there is a close synergy between such theoretical and empirical research – the theoretical making the hypotheses formally precise and the empirical providing data with which to compare to theoretical results [3].

The next steps to progressing this research agenda include:

1. Finding and networking those interested in this agenda.
2. Making the list of alternative hypotheses more complete and more precise.
3. Identifying situations or designing experiments where these hypotheses are distinguished in terms of measurable outcomes.
4. Implementing simulations to explore the theoretical consequences of these different hypotheses in complex social situations, and show what these might look like.

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References

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