

Reasoning At Play, Simplify Anyway

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XXVI. Deutscher Kongress für Philosophie, Münster

25 September, 2024

IN SHORT: You simplify reasoning when you reason using only a subset of the information available to solve a reasoning problem. Sometimes you simplify by default, other times you do it as a result of environmental pressures, and other times you do it with the express intention to simplify. Doxastic states play a role in simplified ways of reasoning. They are one of reasoning's inputs. I argue that voluntariness in reasoning is separable from voluntariness of doxastic-state-formation. This can draw a lesson for the debate about doxastic voluntarism in belief.

1. How to Make it Simple?

Some Illustrations:

Case 1 (Planning). In planning my day—a June day in Palo Alto—I simply take it for granted that it will not rain even though I am not certain about this. If I were instead figuring out at what odds I would accept a monetary bet from you on the weather I would not simply take it for granted that it will not rain. But in my present circumstances taking this for granted simplifies my planning in a way that is useful, given my limited resources for reasoning. (Bratman 1992, p. 5)

Case 2 (Polls). Elections are close. Party A is polling at around 45% for months now, showing a consistent trend. The remaining 55% is equally distributed among Parties B, C and D. Jones, a political analyst, is reading the latest polls and on the basis of this evidence forecasts that Party A will outperform every other party. ²

Case 3 (Bank). Is the bank open on Saturday? Depends on the stakes! ³

Specially in a world of overabundance of information, our reasoning threatens to become intractably complex if we don't disregard complex rules or omit information.

How do doxastic states can play a *simplifying role*? I align with existing literature in defining the doxastic role in reasoning as:

Simplifying Role \approx A doxastic state $\mathcal{D}p$ plays the simplification role only if $\mathcal{D}p$ disposes S to assume p in reasoning.

For instance, a subject S simplifies reasoning with $\mathcal{D}p$ when \mathcal{D} disposes S to assume p or take p for granted.

Notice that \mathcal{D} itself can be categorical or graded. A subject S can simplify her reasoning with $c(p) = x$ because some heuristic disposes her to assume p . ⁴

TWO MAIN questions in the literature on simplified reasoning:

I. Rationality Question:⁵ if more information leads to more knowledge and better decisions, how and why is simplification rational? Is simplification epistemically or practically rational?

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Thanks for your feedback!

Plan:

1. How to make it simple?
 2. A Dual-Control View
 3. Simplification, Complicated
- + Appendix

Let's stipulate here that the agent does *not believe* that it won't rain (*pace* Bratman).

Bratman-Acceptance \approx an inner state on the basis of which we form and maintain plans and intentions and that is sensitive to different practical pressures (e.g., the necessity to simplify, high stakes, cooperation, special obligations, among other things.) See Soter 2023 for a recent treatment.

Belief \approx an inner state that is context-independent, responsive to evidence and truth-directed, involuntary (i.e. not formed by choice), and under rational requirements of coherence (see Williams 1970). In the probabilistic case, credences are accuracy-directed.

² See Dinges 2021, sec. 4.1. See Buchak 2014 for the insufficiency of statistical evidence for belief and the connection of belief and blame. Moss 2018, Ch. 10 generalizes the argument for legal proof.

³ See DeRose 1992, Dinges 2021, sec. 4.2

⁴ See Tang 2015; Dinges 2022. For discussion, see Palmira 2023.

⁵ See: Harsanyi 1985, Bratman 1992, Lance 1995, Holton 2008, Wedgwood 2012, Ross and Schroeder 2014, Staffel 2019, Dinges 2021, Palmira 2023.

II. State-Functional Question: Which doxastic state(s) \mathcal{D} is(are) able to play the simplification role?⁶

MY QUESTION TODAY is related but different from the subject in the Question II. In particular, I am interested in the:

III. Control Question: What type of control is involved in simplified reasoning?

⁶ Answers in the menu: \mathcal{D} = Belief (Staffel 2019, Ross and Schroeder 2014), Credence (Dinges 2021), Acceptance (Dinges 2022), Imagining (Palmira 2023). Question II is mostly relevant in the context of “Bayesian Challenge” (see Jeffrey 1970 and Kaplan 1998, Ch. 4) is central in this discussion.

2. A Dual-Control View

Cases 1, 2, and 3 help motivate the following premise:

Simplification Flexibility: Reasoners can control directly and voluntarily when and how they simplify their reasoning.

THESE CASES show a potential of switching that is typically present at *act-tokens* of reasoning.

However, is not necessary that *all acts* of simplification are subject to direct and voluntary control.

Notice: control need not be present at every *act-token* of reasoning, but some of them could still count as simplified ways of reasoning. Think about your favorite heuristic or some habits you acquired some time ago to make things simple.

How so?

DISTINGUISH potential for direct voluntary control in how we reason \neq the same type of control in the attitudes used to *undertake our reasoning*.

The distinction implies *different control profiles* at different levels:

- Choice level: we select how to perform our reasoning. Here, control can be either direct and voluntary (as with acceptance) or indirect (as with belief).
- Operational: our reasoning is at play. The attitude \mathcal{D} is activated, disposing to assume p without further possibility of control at the given reasoning token. Control might be regained for purposes of reflection.

In simplified reasoning, we control which doxastic attitude \mathcal{D} will be at play while we undertake our reasoning. But that doesn't mean the undertaking itself isn't either automatic or compelling us to reason in certain ways!

Dinges appeals to the blinking example, exposing a tension in my view:

Staffel (2019, n.5) states [...] that ‘we usually can't employ deliberative control over which claims we take for granted in framing a reasoning problem, this is done automatically and without our conscious awareness’. I agree that we often grant propositions ‘automatically and without our conscious awareness’ [...]. But it does not follow that we lack ‘deliberative control’. Analogously, we often blink automatically without our conscious awareness. Nevertheless we can control our blinking if we want. (Dinges 2021, n. 4)

The dual-control view about simplification thus allows for both cases. In particular, a theory addressing the question of control in simplification must allow involuntary doxastic states as candidates for **Simplification Role**.

The dual control view doesn't need to defend that automaticity entails lack of control. Lack of control is constrained to reasoning at play, when reasoning is being undertaken. I agree that control needs to be present at act-tokens if we want to make plausible **Simplification Flexibility**.

BUT control is not thereby extended to reasoning at play.

Non-ideal methodologies in epistemology call for psychologically realistic theorizing. This could involve simplifying when reasoning is at play. As limited reasoners, we can't help but assume things (involuntarily).

3. *Simplification, Complicated*

If a view about voluntary control doesn't distinguish between the choice and the operational level, full control would defeat the simplification purpose by producing a regress.⁷

I HAVE BEEN RELYING on the following unstated premise:

Simplification Involuntarism If a doxastic state \mathcal{D} can play the simplification role, then \mathcal{D} is not necessarily potentially under our direct voluntary control.

MY CONTENTION is that the possibility of voluntary simplification is paradoxically insufficient for real simplification.

THE WORRY is this. Suppose we deny **Simplification Involuntarism** and endorse rather:

Simplification Voluntarism: If a doxastic state \mathcal{D} can play the simplification role, then \mathcal{D} is necessarily potentially under our direct voluntary control.

TAKE some doxastic state \mathcal{D}_1 , which a subject decides to stop using for reasoning. The agent rather adopts \mathcal{D}_2 . By **Simplification Voluntarism**, we can exert that control to come back to the previous \mathcal{D}_1 . This potential is open even if we didn't actually perform reasoning with \mathcal{D}_2 .

But this is implausible. Why to change in the first place, if I can create a loop of switching back and forth? This doesn't look very simplified!

MORE CAREFULLY:

Simplification Voluntarism is not obviously false. It has some motivation in its favor: in Case 1 the agent stops treating $\neg r$ as true voluntarily and directly.⁸

Lack of the same type of control over belief is argued to be sufficient for rejecting belief as a candidate to play the simplification role in that particular case.

This doesn't mean that involuntary doxastic states are *always* the things that people refer to when they talk about others assuming, taking as true or taking for granted p in an argument. We just need to make room for involuntarism about simplification, given examples of involuntary acts of taking things for granted or assuming.

⁷ See an example in the Appendix.

In other words: If this premise is true, then simplification role needs to be conceptualized as always potentially under voluntary control.

⁸ **Voluntarily** \approx by choice and non-coercively. (Hyman 2015)

Notice two senses of oppositeness: Involuntary

1. **Involuntary:** automatic (cannot be controlled by choice).

2. **Not voluntary:** Out of ignorance, or under coercion or compulsion.

Directly \approx no mediation of, say, evidence gathering with the aim of believing $\diamond r$.

It is stipulated that he accepts $\diamond r$ non-coercively with the aim of assessing the bet and without mediation of evidence-gathering.

But notice further: the *locus* of control in cases of simplification is in the *act-token* of adopting some $\mathcal{D}p$. By both **Simplification Flexibility** and **Simplification Voluntarism** the connection only happens at this token-level.

It would be certainly incoherent that the subject in Case 1 simplified by choosing $A \diamond r$ deliberately *and* involuntarily for a specific act.

But is not odd that sometimes people accept things non-deliberately.

If the doxastic state \mathcal{D} fulfilling the simplification role is always potentially under control, we couldn't avoid to end up in a regress. Nobody would simplify reasoning if they have to make it complex first at a higher-order level and then come back.⁹

Upshot: the *locus* of control doesn't extend to cover all cases of simplifying his reasoning. We need to reject **Simplification Voluntarism**.

Someone can non-deliberately accept q , because they accepted p and independently believed in $p \rightarrow q$.

If simplification doesn't have an automatic element, we would need to exert control both to adopt some \mathcal{D} and also to stop switching it to another one. But, if we want reasoning to be at play, control needs to *stop* at some point.

⁹ See Appendix.

Wrap Up

FIRST, I defended a dual-control view of simplification in reasoning.

AFTERWARDS, I rejected the following argument:

P1. Simplification Flexibility: Reasoners can control directly and voluntarily when and how they simplify their reasoning.

P2. Simplification Voluntarism: If a doxastic state \mathcal{D} can play the simplification role, then \mathcal{D} is necessarily potentially under our direct voluntary control.

P3. Belief Involuntarism: Belief is an involuntary doxastic state.

\therefore Belief can't play the simplification role.

INVOLUNTARISTS about belief can benefit from this. My argument shows that we don't need to reject **Belief Involuntarism** in order to explain the flexibility we enjoy in reasoning simplification.

Appendix. Decision-Theoretic Framework

CONSIDER FOR ILLUSTRATION a decision problem¹⁰ looking like this:

$$D$$

	S_1	S_2
A_1	$O_{1,1}$	$O_{1,2}$
A_2	$O_{2,1}$	$O_{2,2}$

¹⁰ A decision problem is a tuple $D = (A, S, O, U)$, where A represents a set of actions, S represents a set of states of the world, O represents the set $A \times S$ of outcomes and U is a stipulated, real-valued utility function.

Table 1: A 2x2 decision matrix problem representing a decision problem. The decision problem could be solved determining $U1 = MEU(D1)$

Now consider a second, expanded¹¹ decision problem:

$$D_1^+$$

	S_1	S_2	S_3
A_1	$O_{1,1}$	$O_{1,2}$	$O_{1,3}$
A_2	$O_{2,1}$	$O_{2,2}$	$O_{2,3}$

¹¹ See Joyce 1999, Ch 4.

Table 2: A 2x3 decision matrix problem representing a slightly more complex decision problem. The decision problem could be solved determining $U2 = MEU(D2)$

BUT which of **D1** or **D2** should the decision maker solve?

$$D^2$$

	$U1 = U2$	$U1 < U2$
Solve D1	$U1$	$U1$
Solve D2	$U2$	$U2$

Table 3: A 2x2 decision matrix problem representing a decision problem. This decision problem can only be solved by MEU if D1 and D2 are already solved.

The example above illustrates one way in which the potential for controlling simplification might go. Control involves the potential choice of solving either **D1** or **D2**.

Assume that **D1** simplifies reasoning because it disregards S_3 . Rationality would be impossible for **D1** if rationality required having solved **D2** beforehand. But if potential control needs to be always present, then it would permit *going back* to **D1**, which is already irrational to go back to!

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