Review of: "Vicious cycles and questions without answers"

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The short paper provides an interesting analysis on why agents hold on to conclusions contradicting their given nature, despite that the nature is signaling those conclusions are contradictory. The author terms these types of conclusions as forced conclusions and holding onto them as vicious cycles. The main objective of the paper, using elementary logic, is to explain how vicious cycles form and how they can be dismantled. Overall, the paper is extremely relevant and applicable to many real-world situations and it would be interesting to see some of those explored in the future iterations.

To summarize the work, the author starts by explaining that when an agent holds a forced conclusion, the nature will signal to the agent the low utility of holding that conclusion; a symptom. This signal is inevitably perceived by the agent. The agent can either maintain their conclusion or abandon it. If they maintain the conclusion despite the signal, they enter the vicious cycle where they continuously reinforce their forced conclusion and receive the low utility signal from the nature. It is in human nature to try to focus on these symptoms and remove them. However, attempting to remove symptom simply generates more symptoms as the forced conclusion continues to clash with the nature. The solution, according to the author, is precisely in realizing that vicious cycles only exist when we feed them through our attempts to remove symptoms. If we stop doing that, the problem goes away on its own.

I see two interesting pathways to improve the work. First, it would be interesting to see what happens when an agent expects low utility in response to their conclusion. This is somewhat covered by the paper as it would fall under what the author calls misconceived message, but it would create a special situation in which the agent interprets the signal as confirming the correspondence of the nature and the conclusion. For example, what if an agent reaches a conclusion about the nature that is incorrect; however, it includes the expectation that holding said conclusion will result in low utility symptom. In that situation, the low utility symptom would be seen as a confirmation of conclusion, the agent would not necessarily be trying to remove it as they would see it as unavoidable, and they would continue to stay in the vicious cycle. How could that vicious cycle be broken?

Second, I think the work could benefit from the Systems Thinking perspective on vicious cycles. It understands vicious cycles as the products of reinforcing feedback loops that can be broken and coopted into engines of positive growth, specifically by identifying the link in the vicious cycle governed by people’s beliefs or assumptions and breaking it. It would require the addition of a more clear causal structure but it would allow the author to lean into an established field of literature with specific practical implications.

To conclude, the paper at hand is an interesting investigation into vicious cycles and how to break them that has great

potential for further development and practical applicability.