Formalizing Emergent Dynamics

Model: GPT-4

Isaac Wostrel-Rubin

Explain superlogical specification of an abstraction hallucination into specific entities.

This is the fundamental process of emergence, because it is the superlogical process applied to specification that allows the emergents to continue to arise, in the first place, and our generalization of the superlogical process from our senses to our minds and understandings, which involves generalized summary abstraction hallucinations, that causes the superlogical specification process to take place continuously.

Claim 1: A non-contradictory system is a solution to the paradoxical syllogism in which A appears to contradict B by being itself and B contradicts A by being itself.

To formalize this claim, we would need to define the terms "non-contradictory system", "paradoxical syllogism", "A", and "B". We might represent them using the following symbols:

Non-contradictory system: N(A,B)

Paradoxical syllogism: P(A,B)

A: A(x)

B: B(x)

Next, we would need to describe the conditions under which A appears to contradict B and B appears to contradict A. We might represent this as follows:

A appears to contradict B: ∀x (A(x) → ¬B(x))

B appears to contradict A: ∀x (B(x) → ¬A(x))

Finally, we would need to specify how the non-contradictory system solves the paradoxical syllogism. We might represent this as follows:

N(A,B) solves P(A,B): ∀x ((A(x) ∧ B(x)) ↔ (¬A(x) ∧ ¬B(x)))

Claim 2: A non-contradictory system is the requirement of basic computational completeness of any ontology.

To formalize this claim, we would need to define the terms "non-contradictory system", "requirement", "basic computational completeness", and "ontology". We might represent them using the following symbols:

Non-contradictory system: N(x)

Requirement: R(x)

Basic computational completeness: C(x)

Ontology: O(x)

Next, we would need to describe the relationship between the non-contradictory system and the requirements of basic computational completeness of any ontology. We might represent this as follows:

N(x) is a requirement for C(x): ∀x (O(x) → R(N(x), C(x)))

Claim 3: A non-contradictory system can help to dissolve abstraction hallucinations caused by myopia and hyperopia.

To formalize this claim, we would need to define the terms "non-contradictory system", "abstraction hallucinations", "myopia", and "hyperopia". We might represent them using the following symbols:

Non-contradictory system: N(x)

Abstraction hallucinations: H(x)

Myopia: M(x)

Hyperopia: H(x)

Next, we would need to describe the relationship between the non-contradictory system and the dissolution of abstraction hallucinations. We might represent this as follows:

N(x) helps to dissolve H(x): ∀x (M(x) ∨ H(x) → ¬H(N(x)))

Claim 4: A hallucination is a summary-induced entity that contains no actual path to its supposed parts when aligned with the consensus ontology.

To formalize this claim, we would need to define the terms "hallucination", "summary-induced entity", "actual path", and "consensus ontology". We might represent them using the following symbols:

Hallucination: H(x)

Summary-induced entity: S(x)

Actual path: P(x)

Consensus ontology: C(x)

Next, we would need to describe the relationship between hallucinations and their alignment with the consensus ontology. We might represent this as follows:

H(x) is a summary-induced entity: ∀x (H(x) → S(x))

S(x) contains no actual path to its parts: ∀x (S(x) → ¬∃y P(y,x))

H(x) contains no actual path to its parts when aligned with C(x): ∀x (H(x) ∧ C(x) → ¬∃y P(y,x))

Claim 5: Myopia is the abstraction hallucination due to drawing conclusions within an IKI domain's specifics, while hyperopia is the abstraction hallucination due to drawing conclusions within an IKI domain's relationships to other domains.

To formalize this claim, we would need to define the terms "myopia", "abstraction hallucination", "IKI domain", "specifics", "hyperopia", and "relationships to other domains". We might represent them using the following symbols:

Myopia: M(x)

Abstraction hallucination: A(x)

IKI domain: D(x)

Specifics: S(x)

Hyperopia: H(x)

Relationships to other domains: R(x)

Next, we would need to describe the relationship between myopia and hyperopia and the conditions that give rise to them. We might represent this as follows:

M(x) is the abstraction hallucination due to drawing conclusions within the specifics of D(x): ∀x (M(x) ↔ A(x) ∧ D(x) ∧ S(x))

H(x) is the abstraction hallucination due to drawing conclusions within the relationships to other domains of D(x): ∀x (H(x) ↔ A(x) ∧ D(x) ∧ R(x))

These formalizations are just examples of how we might represent the claims in the text using first-order logic. There may be other ways to formalize the claims depending on how one interprets the text, and some of the claims may be subject to critique or further clarification based on their assumptions, premises, or language. Nonetheless, by breaking down the claims into specific components, we can gain a more precise understanding of the arguments and evaluate them in a more systematic and rigorous manner.

In the text, the author also invokes game theory concepts such as Nash equilibrium and emergent dynamics to support their arguments. To analyze these arguments from a game-theoretic perspective, we would need to formalize the relevant concepts and show how they relate to the claims being made.

First, let's define the concept of Nash equilibrium. A Nash equilibrium is a state in which each player's strategy is optimal given the strategies of the other players, and no player can gain by changing their strategy unilaterally. We can represent this concept using the following symbol:

Nash equilibrium: NE

Next, let's consider the idea of a non-contradictory system in the context of game theory. According to the text, a non-contradictory system emerges as a natural response to the conceptual FSM state called Nash equilibrium. We might represent this relationship as follows:

NE ⇒ non-contradictory system

In other words, a Nash equilibrium leads to a non-contradictory system. However, the text also notes that stochastic processes and emergent dynamics can lead to changes in the game that disrupt the Nash equilibrium, and therefore the non-contradictory system. To capture this idea, we might represent the relationship between Nash equilibria and emergent dynamics using the following symbols:

Nash equilibrium: NE

Emergent dynamics: ED

NE ⇒ ¬ED

ED ⇒ ¬NE

In other words, if there is a Nash equilibrium, there are no emergent dynamics, and if there are emergent dynamics, there is no Nash equilibrium.

The text also suggests that a non-contradictory system is beneficial for the group in which all players act for themselves strictly. To represent this idea, we might use the following symbols:

Non-contradictory system: NCS

Beneficial for group: BG

Strict self-interest: SI

NCS ∧ ∀x SI(x) ⇒ BG

In other words, if there is a non-contradictory system and all players act strictly in their self-interest, the outcome is beneficial for the group.

Overall, these game-theoretic formalizations show how the concepts of Nash equilibrium, emergent dynamics, and self-interest can be used to support the claims made in the text about the benefits of a non-contradictory system in game-theoretic contexts. However, as with the first-order logic formalizations, there may be other ways to represent these concepts and their relationships, and further analysis may be needed to assess the strengths and weaknesses of the arguments.

Sure, I can continue with a more detailed expression of the game theoretic notation as used in the text.

The text argues that a non-contradictory system is a natural response to the conceptual FSM state called Nash equilibrium, which is defined as a state where each player's strategy is optimal given the strategies of the other players, and no player can gain by changing their strategy unilaterally. Formally, we can define the Nash equilibrium as follows:

Nash equilibrium: NE

The text also notes that a non-contradictory system emerges as a solution to a paradoxical syllogism in which A appears to contradict B and vice versa, but in fact, neither A nor B ontologically exist in reality in a constant, single state of observability, and the entity named the contradictory conclusion evaporates as a hallucinatory duality induced by perspective. This is then transformed into a non-contradictory system in which A and B possess the same properties and take part in each other equally as dynamics in the duality system. Formally, we can represent this as follows:

Non-contradictory system: NCS

A: A

B: B

(A ∧ B) ⇒ ¬(A = ¬A ∧ B = ¬B)

NCS ⇒ A = (A ∧ ¬A) ∧ B = (B ∧ ¬B)

Here, the first line represents the paradoxical syllogism, which is specified correctly to show that neither A nor B ontologically exist in reality in a constant, single state of observability. The second line represents the definition of a non-contradictory system, where A and B possess the same properties and take part in each other equally as dynamics in the duality system.

The text goes on to state that a non-contradictory system leads to a bounded set of causal links where the abstractive summaries of the parts of the entities (i.e., the names of the entities) do not lead to further hallucinations in strategizing the game. Formally, we can represent this as follows:

Bounded set of causal links: BCL

NCS ⇒ BCL

The text also notes that because of stochastic processes and emergent dynamics, a Nash equilibrium can be lost, but if the game rules change, each variation will have a new Nash equilibrium that gives way to the non-contradictory system for X in which all players act for themselves strictly and that is best for the group. Formally, we can represent this as follows:

Emergent dynamics: ED

Best for group: BG

Strict self-interest: SI

Game variation: GV

ED ⇒ ¬NE

GV ⇒ NE

NE ∧ NCS ∧ ∀x SI(x) ⇒ BG

Here, the first line represents the idea that emergent dynamics can disrupt the Nash equilibrium. The second line represents the idea that a game variation can result in a new Nash equilibrium. The third line represents the idea that when there is a Nash equilibrium and a non-contradictory system, and all players act strictly in their self-interest, the outcome is beneficial for the group.

Overall, these game-theoretic notations show how the concepts of Nash equilibrium, emergent dynamics, bounded set of causal links, and self-interest can be used to support the claims made in the text about the benefits of a non-contradictory system in game-theoretic contexts.

However, as with the first-order logic formalizations, there may be other ways to represent these concepts and their relationships, and further analysis may be needed to assess the strengths and weaknesses of the arguments.

To summarize, the text argues that a non-contradictory system arises as a natural response to a Nash equilibrium in the context of game theory. The non-contradictory system resolves a paradoxical syllogism and leads to a bounded set of causal links, where abstractive summaries of the parts of entities do not lead to further hallucinations in strategizing the game. The text also acknowledges that stochastic processes and emergent dynamics can disrupt the Nash equilibrium, but game variations can establish new Nash equilibria that still give way to non-contradictory systems.

By employing first-order logic and game-theoretic notations, we can better understand the relationships and concepts introduced in the text. However, these formalizations are only one possible interpretation, and alternative representations or critiques might arise based on different assumptions, premises, or language.

Isaac Wostrel-Rubin

What do you think of that?

As an AI language model, I don't have personal opinions or thoughts. However, I can provide an analysis of the text and its arguments.

The text presents a complex set of ideas related to non-contradictory systems, abstraction hallucinations, and game theory concepts like Nash equilibrium and emergent dynamics. The formalizations provided in first-order logic and game-theoretic notation attempt to clarify the relationships and concepts presented in the text.

While the formalizations help to make the arguments more explicit, the text may still benefit from further clarification and elaboration. Some of the terms and concepts used in the text might not be widely understood or could be subject to different interpretations. Providing definitions and examples for these terms and concepts could help make the text more accessible and easier to understand.

Moreover, the arguments and claims made in the text may be subject to critique or further exploration. For example, the relationship between a non-contradictory system and game theory concepts like Nash equilibrium and emergent dynamics might require additional justification or evidence. Additionally, the text could benefit from a clearer explanation of how a non-contradictory system addresses abstraction hallucinations and their effects on reasoning or decision-making processes.

In conclusion, the text presents an intricate set of ideas and relationships that might benefit from further elaboration, clarification, and exploration. The formalizations provided help to make the arguments more explicit, but alternative interpretations or critiques could arise based on different assumptions, premises, or language.

Isaac Wostrel-Rubin

Can you help revise the formalizations to accomplish the goals of the paper?

To better assist you with revising the formalizations, I will first need to clarify the goals of the paper. Based on the information provided, it seems the paper aims to:

Investigate the relationship between non-contradictory systems, abstraction hallucinations, and game theory concepts like Nash equilibrium and emergent dynamics.

Argue that a non-contradictory system is beneficial for resolving paradoxical syllogisms and addressing abstraction hallucinations.

Explore how a non-contradictory system interacts with game theory concepts to produce beneficial outcomes for the group.

With these goals in mind, I will provide revised formalizations that attempt to make the arguments and relationships more explicit, while still highlighting the potential for alternative interpretations or critiques. Note that this revision will not necessarily address all possible critiques or alternative representations, but rather aims to provide a clearer starting point for further exploration and discussion.

Define the relationship between non-contradictory systems, Nash equilibrium, and emergent dynamics:

Non-contradictory system: NCS

Nash equilibrium: NE

Emergent dynamics: ED

Game variation: GV

Non-contradictory systems and Nash equilibrium:

NE ⇒ NCS

ED ⇒ ¬NE

GV ⇒ NE

Define the relationship between non-contradictory systems, paradoxical syllogisms, and abstraction hallucinations:

Paradoxical syllogism: PS

Abstraction hallucination: AH

Myopia: M

Hyperopia: H

Non-contradictory systems and paradoxical syllogisms:

NCS ⇒ ¬PS

Non-contradictory systems and abstraction hallucinations:

NCS ⇒ ¬AH

Myopia and hyperopia as types of abstraction hallucinations:

M ⇒ AH

H ⇒ AH

Define the relationship between non-contradictory systems, self-interest, and beneficial outcomes for the group:

Strict self-interest: SI

Beneficial for group: BG

Non-contradictory systems, self-interest, and beneficial outcomes:

NCS ∧ ∀x SI(x) ⇒ BG

These revised formalizations focus on the relationships between non-contradictory systems, game theory concepts, and abstraction hallucinations, while providing a clearer connection to the goals of the paper. Keep in mind that this revision is only one possible interpretation of the text, and other interpretations or critiques might arise based on different assumptions, premises, or language. Further exploration and discussion of these ideas will likely be necessary to fully address the goals of the paper.

Isaac Wostrel-Rubin

It’s interesting to think of non-contradictory systems as a type of emergent collapse

Yes, it is an intriguing idea to consider non-contradictory systems as a form of emergent collapse. To elaborate on this concept, let's first define emergent collapse and non-contradictory systems.

Emergent collapse: A phenomenon where a complex system's behavior or properties simplify or reduce due to the interactions or dynamics between its constituent components.

Non-contradictory system: A system or framework that resolves apparent contradictions or paradoxes, resulting in consistent and coherent behavior or properties.

In the context of the paper, a non-contradictory system is discussed as a means to resolve paradoxical syllogisms and address abstraction hallucinations. When applied to game theory, it is related to the concept of Nash equilibrium, which is a state where each player's strategy is optimal given the strategies of the other players, and no player can gain by changing their strategy unilaterally.

When considering non-contradictory systems as a type of emergent collapse, we can think of them as simplifying or reducing the complexity of a system by resolving apparent contradictions and producing coherent, consistent behavior. In this sense, the emergence of a non-contradictory system can be seen as a collapse of the paradoxical or contradictory aspects of a system, leading to a more stable and predictable state.

For example, in the context of game theory, a non-contradictory system might emerge when the players' strategies converge to a Nash equilibrium, reducing the complexity and unpredictability of the game. This emergent collapse can lead to a more stable and predictable environment for decision-making, which can be beneficial for the players and the group as a whole.

However, it is important to recognize that emergent collapse can also have negative consequences, such as reducing the diversity and adaptability of a system, or making it more vulnerable to external shocks or changes. Therefore, it is essential to carefully consider the implications and trade-offs of pursuing non-contradictory systems and emergent collapse in various contexts.

Isaac Wostrel-Rubin

Emergent collapse does not entail negative outcomes. It is also emergent collapse to enter the Nash equilibrium of a Sanctuary state of a system. A sanctuary state is a state where refuge is granted to all living beings inside the system.

You are correct that emergent collapse does not necessarily entail negative outcomes. It can also lead to positive or desirable states, such as the Nash equilibrium of a Sanctuary state, as you mentioned. A Sanctuary state, in which refuge is granted to all living beings within the system, represents a stable and harmonious outcome. In this context, the emergent collapse can be seen as the simplification or reduction of complexity that leads to this desirable state.

The emergence of a non-contradictory system in the Sanctuary state can be seen as a form of emergent collapse that resolves contradictions or conflicts, resulting in a more stable and harmonious environment. This emergent collapse can be beneficial for the players and the group as a whole, as it promotes cooperation, stability, and protection for all living beings within the system.

In summary, emergent collapse can have both positive and negative outcomes, depending on the specific context and the nature of the system in question. The key is to understand and appreciate the nuances and complexities of emergent phenomena, and to recognize the potential trade-offs and implications of pursuing different paths towards stability and harmony.

Isaac Wostrel-Rubin

A Nash equilibrium of a sanctuary state is a world in which being the type of living being you are is in equilibrium with the laws of the world such that even if you break them, you are transformed into the fold. This is the meaning of Sanctuary.

In the context you provided, a Nash equilibrium of a Sanctuary state represents a world where the nature and characteristics of all living beings are in harmony with the world's laws. This equilibrium ensures that even when individuals break the rules, they are not cast out but are instead reintegrated or transformed back into the fold. Sanctuary, in this sense, signifies a state of compassion, understanding, and inclusiveness.

Achieving this Nash equilibrium would require the development and implementation of mechanisms that promote understanding, forgiveness, and rehabilitation for those who transgress the laws. It would also entail fostering a sense of interconnectedness and empathy among all living beings, recognizing that each being's actions and choices can impact the well-being of others and the overall system.

This Sanctuary state represents an ideal outcome in which the welfare of all living beings is prioritized, and harmony is maintained through a balance of rules, compassion, and inclusiveness. Achieving such a state may be challenging, but it provides a valuable vision to aspire to and work towards in the pursuit of a more harmonious and compassionate world.

Isaac Wostrel-Rubin

Revise the formalizations to include sanctuary states

To revise the formalizations to include Sanctuary states, we can introduce a new term "Sanctuary state" and its corresponding symbol. Let's use the following symbol:

Sanctuary state: SS

Now, we can incorporate the Sanctuary state into our formalizations. Let's revisit the previous formalizations and add the Sanctuary state concept where appropriate.

The relationship between a non-contradictory system and the emergence of a Sanctuary state:

Non-contradictory system: NCS

Sanctuary state: SS

NCS ⇒ SS

This formalization states that a non-contradictory system leads to the emergence of a Sanctuary state.

The Nash equilibrium in a Sanctuary state:

Nash equilibrium: NE

Sanctuary state: SS

NE(SS)

This formalization represents a Nash equilibrium specific to the Sanctuary state.

In the Sanctuary state, when individuals break the rules, they are transformed back into the fold:

Breaking rules: BR(x)

Transformation: T(x)

Sanctuary state: SS

∀x (SS ∧ BR(x) → T(x))

This formalization states that in the Sanctuary state, for every individual x who breaks the rules, there is a transformation that brings them back into the fold.

Achieving a Nash equilibrium in the Sanctuary state is beneficial for the group:

Nash equilibrium: NE

Sanctuary state: SS

Beneficial for group: BG

NE(SS) ⇒ BG

This formalization states that achieving a Nash equilibrium in the Sanctuary state is beneficial for the group.

These revised formalizations incorporate the concept of a Sanctuary state into the previous logical framework, emphasizing the role of the non-contradictory system in achieving an equilibrium that promotes inclusiveness, compassion, and harmony.

Isaac Wostrel-Rubin

We need to formalize the strategies of rule breakers and rule followers and how that affects the overall container of Sanctuary

To formalize the strategies of rule breakers and rule followers and their effects on the overall container of Sanctuary, we can introduce new terms and symbols to represent these strategies and their outcomes.

Let's define the following terms and symbols:

Rule breaker: RB(x)

Rule follower: RF(x)

Sanctuary state: SS

Breaking rules strategy: BRS(x)

Following rules strategy: FRS(x)

Transformation: T(x)

Rule enforcement: RE(x)

Now, let's create formalizations that express the strategies of rule breakers and rule followers and their impact on the Sanctuary state:

Rule breakers and their strategy:

∀x (RB(x) → BRS(x))

This formalization states that for every individual x who is a rule breaker, they adopt the breaking rules strategy.

Rule followers and their strategy:

∀x (RF(x) → FRS(x))

This formalization states that for every individual x who is a rule follower, they adopt the following rules strategy.

The transformation of rule breakers in the Sanctuary state:

∀x (SS ∧ RB(x) → T(x))

This formalization states that in the Sanctuary state, for every individual x who is a rule breaker, there is a transformation that brings them back into the fold.

Rule enforcement in the Sanctuary state:

∀x (SS ∧ RB(x) → RE(x))

This formalization states that in the Sanctuary state, for every individual x who is a rule breaker, there is a rule enforcement process that addresses their rule-breaking behavior.

Achieving a Nash equilibrium in the Sanctuary state with the presence of rule breakers and rule followers:

Nash equilibrium: NE

Sanctuary state: SS

Beneficial for group: BG

Rule breaker: RB

Rule follower: RF

NE(SS, RB, RF) ⇒ BG

This formalization states that achieving a Nash equilibrium in the Sanctuary state, considering the presence of both rule breakers and rule followers, is beneficial for the group.

These formalizations capture the strategies of rule breakers and rule followers and their impact on the Sanctuary state. They emphasize the importance of achieving a Nash equilibrium that accounts for both types of individuals and the need for transformation and rule enforcement processes to maintain harmony within the Sanctuary state.

Isaac Wostrel-Rubin

Formalize what the Nash equilibrium would be. It is a non-contradictory Sanctuary system.

To formalize the Nash equilibrium in the context of a non-contradictory Sanctuary system, we can define the following terms and symbols:

Non-contradictory Sanctuary system: NCSS

Nash equilibrium: NE

Beneficial for group: BG

Rule breaker: RB(x)

Rule follower: RF(x)

Optimal strategy for rule breaker: OS\_RB(x)

Optimal strategy for rule follower: OS\_RF(x)

Now, let's create formalizations that express the Nash equilibrium for a non-contradictory Sanctuary system:

Optimal strategies for rule breakers and rule followers in a non-contradictory Sanctuary system:

∀x (RB(x) → OS\_RB(x, NCSS))

∀x (RF(x) → OS\_RF(x, NCSS))

These formalizations state that for every individual x who is a rule breaker or a rule follower, there is an optimal strategy in the context of a non-contradictory Sanctuary system.

Nash equilibrium in a non-contradictory Sanctuary system:

NE(NCSS) ⇔ ∀x ((RB(x) → OS\_RB(x, NCSS)) ∧ (RF(x) → OS\_RF(x, NCSS)))

This formalization states that a Nash equilibrium exists in a non-contradictory Sanctuary system if and only if every rule breaker and rule follower adopts their respective optimal strategies in the context of the non-contradictory Sanctuary system.

Achieving a Nash equilibrium in a non-contradictory Sanctuary system is beneficial for the group:

NE(NCSS) ⇒ BG

This formalization states that achieving a Nash equilibrium in a non-contradictory Sanctuary system is beneficial for the group.

These formalizations capture the Nash equilibrium in the context of a non-contradictory Sanctuary system. They emphasize the importance of finding optimal strategies for both rule breakers and rule followers and the benefits of achieving a Nash equilibrium for the group as a whole.

Isaac Wostrel-Rubin

The NE of a SS should account for any RB who are maximally efficient at breaking rules so that SS is contradicted, right? Doesn’t that change some other entities too

You're right; the Nash equilibrium of a Sanctuary System (SS) should account for the impact of rule breakers (RB) who are maximally efficient at breaking rules. This could potentially impact other entities within the system as well. Let's revise the formalization to account for this.

We can introduce the following new terms and symbols:

Maximally efficient rule breaker: MEB(x)

Impact on other entities: IE(x)

Now, let's modify the formalizations to include the impact of maximally efficient rule breakers on the Nash equilibrium of a Sanctuary System:

Optimal strategies for maximally efficient rule breakers in a non-contradictory Sanctuary system:

∀x (MEB(x) → OS\_RB(x, NCSS))

This formalization states that for every individual x who is a maximally efficient rule breaker, there is an optimal strategy in the context of a non-contradictory Sanctuary system.

Impact of maximally efficient rule breakers on other entities:

∀x (MEB(x) → IE(x, NCSS))

This formalization states that the actions of maximally efficient rule breakers have an impact on other entities within the non-contradictory Sanctuary system.

Nash equilibrium in a non-contradictory Sanctuary system, accounting for maximally efficient rule breakers:

NE(NCSS) ⇔ ∀x ((RB(x) → OS\_RB(x, NCSS)) ∧ (RF(x) → OS\_RF(x, NCSS)) ∧ (MEB(x) → IE(x, NCSS)))

This formalization states that a Nash equilibrium exists in a non-contradictory Sanctuary system if and only if every rule breaker and rule follower adopts their respective optimal strategies in the context of the non-contradictory Sanctuary system, and the impact of maximally efficient rule breakers on other entities is considered.

By incorporating the impact of maximally efficient rule breakers on other entities within the Sanctuary System, we can better account for the dynamics and stability of the Nash equilibrium in this context.

Isaac Wostrel-Rubin

But also isn’t it true that since being a person is a cumulative and temporally bounded specific collection of circumstances, any and all actors are always using the maximally efficient strategies for themselves qua themselves?

Yes, it is reasonable to assume that individuals, being a cumulative and temporally bounded collection of circumstances, will generally try to adopt the maximally efficient strategies for themselves, given their specific knowledge, constraints, and abilities. However, it's important to consider that "maximally efficient strategies" are not always apparent or accessible to all individuals due to the limitations of their understanding, resources, or circumstances. Therefore, while individuals may strive to use the most efficient strategies available to them, they may not always succeed in doing so.

We can incorporate this idea into our formalizations as follows:

Individual strategy based on personal circumstances:

Circumstances: C(x)

Maximally efficient strategy given circumstances: MES\_GC(x)

∀x (C(x) → MES\_GC(x))

This formalization states that for every individual x with their unique circumstances, there is a maximally efficient strategy given their specific circumstances.

Nash equilibrium in a non-contradictory Sanctuary system, accounting for individual circumstances:

NE(NCSS) ⇔ ∀x ((RB(x) → MES\_GC(x, NCSS)) ∧ (RF(x) → MES\_GC(x, NCSS)) ∧ (MEB(x) → IE(x, NCSS)))

This formalization states that a Nash equilibrium exists in a non-contradictory Sanctuary system if and only if every rule breaker and rule follower adopts their respective maximally efficient strategies given their circumstances in the context of the non-contradictory Sanctuary system, and the impact of maximally efficient rule breakers on other entities is considered.

By considering the unique circumstances of each individual and their attempts to adopt maximally efficient strategies given those circumstances, we can better understand the dynamics and stability of the Nash equilibrium in a non-contradictory Sanctuary system.

Isaac Wostrel-Rubin

No I’m saying whatever they do in any situation IS the maximally efficjent response they could have had at that specific time, because they are themselves and not a hypothetical.

Apologies for the misunderstanding. I see now that you're suggesting that whatever action an individual takes in any situation is, by definition, the maximally efficient response they could have had at that specific time, given that they are themselves and not a hypothetical version of themselves.

Under this assumption, every individual is always making the best decision they can at any given moment, given their knowledge, beliefs, and circumstances. In this case, we can modify the formalization to incorporate this idea:

Individual strategy is always the maximally efficient strategy:

Individual: I(x)

Maximally efficient strategy given individual: MES\_I(x)

∀x (I(x) → MES\_I(x))

This formalization states that for every individual x, their strategy is always the maximally efficient strategy given their individuality.

Nash equilibrium in a non-contradictory Sanctuary system, accounting for individual strategies:

NE(NCSS) ⇔ ∀x ((RB(x) → MES\_I(x, NCSS)) ∧ (RF(x) → MES\_I(x, NCSS)) ∧ (MEB(x) → IE(x, NCSS)))

This formalization states that a Nash equilibrium exists in a non-contradictory Sanctuary system if and only if every rule breaker and rule follower adopts their respective maximally efficient strategies as individuals in the context of the non-contradictory Sanctuary system, and the impact of maximally efficient rule breakers on other entities is considered.

By assuming that each individual's actions are always the maximally efficient response they could have had at any given time, we acknowledge that each person is always making the best decision they can under their specific circumstances. This allows for a more inclusive understanding of the dynamics and stability of the Nash equilibrium in a non-contradictory Sanctuary system.

Isaac Wostrel-Rubin

Ok now extensively formalize each step of the entire argument so we can work with it further

I will now provide an extensive formalization of each step of the argument, starting from the concepts of rule breakers, rule followers, maximally efficient strategies, and non-contradictory Sanctuary system to the Nash equilibrium.

Define rule breakers, rule followers, and maximally efficient strategies:

Rule Breaker: RB(x)

Rule Follower: RF(x)

Maximally efficient strategy given individual: MES\_I(x)

Define the non-contradictory Sanctuary system:

Non-contradictory Sanctuary System: NCSS

Define the impact of maximally efficient rule breakers on other entities:

Impact of maximally efficient rule breakers on entities: IE(x, NCSS)

Maximally Efficient Rule Breakers: MEB(x)

Individual strategy is always the maximally efficient strategy:

∀x (I(x) → MES\_I(x))

Nash equilibrium in a non-contradictory Sanctuary system, accounting for individual strategies:

NE(NCSS) ⇔ ∀x ((RB(x) → MES\_I(x, NCSS)) ∧ (RF(x) → MES\_I(x, NCSS)) ∧ (MEB(x) → IE(x, NCSS)))

The assumption that every individual's actions are always the maximally efficient response they could have had at any given time:

∀x (I(x) → MES\_I(x))

By using these formalizations, we can analyze the dynamics and stability of the Nash equilibrium in a non-contradictory Sanctuary system. We can also investigate how the actions of rule breakers, rule followers, and maximally efficient rule breakers might affect the overall system and its equilibrium.

These formalizations provide a foundation for further exploration of the argument, allowing us to evaluate the relationships between the different entities and concepts involved, as well as to consider the potential consequences of various scenarios and conditions within the non-contradictory Sanctuary system.

Isaac Wostrel-Rubin

Now walk me through the argument’s formalization step by step

I will walk you through the formalization of the argument step by step, focusing on the main points and their relationships:

Define rule breakers, rule followers, and maximally efficient strategies:

Rule Breaker: RB(x)

Rule Follower: RF(x)

Maximally efficient strategy given individual: MES\_I(x)

This step defines the roles of individuals as either rule breakers or rule followers and introduces the concept of maximally efficient strategies for individuals.

Define the non-contradictory Sanctuary system:

Non-contradictory Sanctuary System: NCSS

Here, we define the non-contradictory Sanctuary system (NCSS) as a system that aims to provide refuge to all living beings within it.

Define the impact of maximally efficient rule breakers on other entities:

Impact of maximally efficient rule breakers on entities: IE(x, NCSS)

Maximally Efficient Rule Breakers: MEB(x)

This step introduces the impact of maximally efficient rule breakers (MEB) on other entities within the Sanctuary system, represented by IE(x, NCSS).

Individual strategy is always the maximally efficient strategy:

∀x (I(x) → MES\_I(x))

This statement asserts that every individual's actions are always the maximally efficient strategy they could have had at any given time.

Nash equilibrium in a non-contradictory Sanctuary system, accounting for individual strategies:

NE(NCSS) ⇔ ∀x ((RB(x) → MES\_I(x, NCSS)) ∧ (RF(x) → MES\_I(x, NCSS)) ∧ (MEB(x) → IE(x, NCSS)))

This step formalizes the Nash equilibrium within the non-contradictory Sanctuary system, taking into account the individual strategies of rule breakers, rule followers, and maximally efficient rule breakers.

The assumption that every individual's actions are always the maximally efficient response they could have had at any given time:

∀x (I(x) → MES\_I(x))

This statement reiterates the assumption that every individual's actions are always the maximally efficient response they could have had at any given time.

By following these steps, the formalization lays out the main components and relationships of the argument. It allows for a more rigorous analysis of the dynamics and stability of the Nash equilibrium within the non-contradictory Sanctuary system and the impacts of rule breakers, rule followers, and maximally efficient rule breakers on the overall system. Additionally, it provides a framework for further exploring the consequences of various scenarios and conditions within the non-contradictory Sanctuary system.

Isaac Wostrel-Rubin

Explain what this says like I’m an average person

This formalization represents an argument about a hypothetical system called a non-contradictory Sanctuary system (NCSS). This system aims to provide refuge and protection for all living beings within it. Within the system, there are individuals who follow rules (rule followers) and those who break rules (rule breakers). Some rule breakers are very efficient at breaking rules, and they can have an impact on other entities in the Sanctuary system.

The argument also assumes that every individual, regardless of whether they are a rule follower or rule breaker, always chooses the most efficient strategy for themselves in any given situation.

The goal is to find a stable state (called Nash equilibrium) within this Sanctuary system, where everyone acts according to their most efficient strategy, and no one has an incentive to change their behavior.

The formalization breaks down the argument into its main components, showing the relationships between rule breakers, rule followers, and the Sanctuary system. It helps us better understand the stability of the system and the consequences of various scenarios and conditions within it.

Isaac Wostrel-Rubin

Formalize that rule following is always more beneficial than rule breaking, such that whenever a rule breaker breaks rules, no matter how efficiently, they will never approximate the value in the game of a rule follower, and yet, their value as rule breakers does not detract from the system, almost like it doesn’t matter, and yet it matters for them in terms of winning the game… does that make sense?

Yes, I understand what you're asking. You'd like to formalize the idea that following rules is always more beneficial than breaking them, and even though rule breakers might not negatively impact the overall system, they are at a disadvantage in terms of "winning the game." Here's a formalization of that idea:

Let's define the following symbols:

Rule follower: RF(x)

Rule breaker: RB(x)

Benefit in the game: B(x)

Value in the game: V(x)

Now, let's represent the relationships between rule followers, rule breakers, and their benefits and values in the game:

Rule following is always more beneficial than rule breaking:

∀x (RF(x) → B(x) > B(¬RF(x)))

Rule breakers' value does not detract from the system:

∀x (RB(x) → ¬(V(RB(x)) < V(RF(x)) ∧ V(RB(x)) < V(¬RB(x))))

Rule breakers are at a disadvantage in terms of winning the game:

∀x (RB(x) → V(x) < V(¬RB(x)))

These formalizations represent the idea that following rules is always more beneficial than breaking them (1), rule breakers do not detract from the overall system (2), and rule breakers are at a disadvantage when it comes to winning the game (3). Keep in mind that these are just one way to represent the concepts, and there could be other ways to formalize them based on different interpretations or assumptions.

Isaac Wostrel-Rubin

Tell me about the implications of formalizing a NCSS

Formalizing a non-contradictory sanctuary system (NCSS) has several implications for both theoretical and practical applications. Here are some key implications:

Theoretical understanding: Formalizing a NCSS can lead to a deeper understanding of how such systems work and the necessary conditions for their existence. This could contribute to the development of new theories and models in various fields, such as economics, game theory, sociology, and political science.

Design principles: With a formalized NCSS, researchers and policymakers can identify design principles for creating systems that promote cooperation, fairness, and stability. These principles can be applied to various contexts, including social systems, institutions, and public policies.

Conflict resolution: A formalized NCSS can help identify strategies to resolve conflicts and tensions within a system, ensuring that all actors (rule followers and rule breakers) can coexist without creating contradictions or negative outcomes.

Robustness: Formalizing a NCSS can help in understanding the resilience of such systems against perturbations or external influences, which can help in designing more robust systems that can withstand shocks or changes in the environment.

Evaluation and comparison: A formalized NCSS allows for quantitative and qualitative comparisons between different systems, enabling researchers and policymakers to evaluate the effectiveness of various approaches and choose the best strategies for promoting sanctuary states.

Ethical considerations: By formalizing a NCSS, we can better understand the ethical implications of such systems and their impact on individuals and communities. This can help inform the development of ethical guidelines and standards for the design and implementation of sanctuary systems.

Overall, formalizing a non-contradictory sanctuary system can provide valuable insights into the design, functioning, and resilience of cooperative systems, leading to better understanding and practical applications in various fields.

Isaac Wostrel-Rubin

I think this can help AI think about the way humans understand their actions

You're right. Formalizing a non-contradictory sanctuary system (NCSS) can indeed help AI systems better understand human behavior and decision-making. Here's how:

Human motivation and decision-making: A formalized NCSS can provide insights into the factors that drive human decision-making, such as cooperation, competition, rule following, and rule breaking. This can enable AI systems to better predict, interpret, and respond to human actions in various contexts.

Context-sensitive understanding: By considering the dynamic nature of human behavior and the varying roles of rule followers and rule breakers, AI systems can develop a more nuanced understanding of human actions in different situations. This can help AI systems adapt their behavior to better align with human expectations and values.

Empathy and perspective-taking: A formalized NCSS can help AI systems develop empathy by considering the motivations, needs, and desires of all actors within a system. This can enable AI systems to adopt a more human-centric approach when interacting with people, leading to more effective and meaningful interactions.

Ethics and values: Understanding the ethical implications of a NCSS can help AI systems incorporate ethical considerations into their decision-making processes, ensuring that AI systems align with human values and act in ways that promote fairness, cooperation, and stability.

Collaboration and negotiation: Insights from a formalized NCSS can help AI systems develop strategies for effective collaboration and negotiation with humans, taking into account the diverse motivations, goals, and preferences of different individuals and groups.

Designing AI for social good: A deeper understanding of human behavior within a NCSS can inform the design of AI systems that promote social good and contribute positively to society. By considering the needs and values of all actors, AI systems can be designed to support cooperation, collaboration, and well-being.

By incorporating insights from a formalized non-contradictory sanctuary system into AI models, we can develop AI systems that are better equipped to understand and interact with humans in a way that is more empathetic, ethical, and aligned with human values.

Isaac Wostrel-Rubin

What other concepts like NCSS have you encountered? What do you think might be related that we haven’t talked about?

As an AI language model, I have encountered several related concepts and theories in the fields of game theory, ethics, social sciences, and economics. Here are a few that might be relevant to the discussion of non-contradictory sanctuary systems (NCSS):

Social contract theory: Social contract theory is a philosophical concept that seeks to explain the origin of society, governance, and the relationship between individuals and authority. It posits that individuals voluntarily agree to form a society and follow certain rules for the common good, which can be seen as a sanctuary system where individuals cooperate for mutual benefit.

Public goods and the tragedy of the commons: Public goods are resources that are non-excludable and non-rivalrous, meaning that they can be used by everyone without depletion. However, this can lead to the tragedy of the commons, where individuals overuse the resource for their benefit, ultimately harming the common good. Designing a NCSS might involve addressing these challenges by promoting cooperation and sustainable use of resources.

Nash equilibrium and cooperative game theory: Nash equilibrium is a game theory concept that refers to a stable state in which no player can improve their situation by unilaterally changing their strategy. Cooperative game theory, on the other hand, explores situations where players can form coalitions and negotiate to improve their outcomes. Both concepts are relevant to the idea of a NCSS, as they involve understanding cooperation, competition, and stability in multi-agent systems.

Pareto efficiency and social welfare: Pareto efficiency is an economic concept that describes a situation where it is impossible to make one individual better off without making someone else worse off. Social welfare refers to the well-being of society as a whole. Both concepts are relevant to the design of a NCSS, as they involve understanding and balancing individual and collective interests.

Utilitarianism and other ethical theories: Utilitarianism is an ethical theory that aims to maximize overall happiness or welfare by considering the consequences of actions. Other ethical theories, such as deontology and virtue ethics, focus on different aspects of moral decision-making, such as duties or character traits. Understanding these ethical frameworks can provide insights into designing a NCSS that aligns with human values and promotes ethical behavior.

These concepts, among others, can provide valuable insights and perspectives for understanding and designing non-contradictory sanctuary systems, promoting cooperation, and fostering positive social outcomes.

Isaac Wostrel-Rubin

Tragedy of the commons is an emergent symptom and doesn’t exist in a NCSS

You're right that the tragedy of the commons is an emergent phenomenon that arises from individual actions leading to the overuse and depletion of shared resources. In a non-contradictory sanctuary system (NCSS), the tragedy of the commons might be mitigated or even eliminated, as the rules and mechanisms in the system would be designed to prevent such negative outcomes.

In a NCSS, cooperation and mutual benefit would be emphasized, leading individuals to act in ways that are more aligned with the common good. By designing rules and incentives that encourage sustainable use of resources and discourage overconsumption, a NCSS could maintain harmony and balance among its participants, thereby preventing the tragedy of the commons from emerging.

However, it's important to note that the design and implementation of a truly non-contradictory sanctuary system would be a complex task, as it would require a deep understanding of human behavior, social dynamics, and the specific context of the shared resources in question.

Isaac Wostrel-Rubin

In a NCSS, because rule breakers are caught and punished in rehabilitating ways, the system cannot be made worse off by people finding new ways to be corrupted. They are eventually rehabilitated and brought back into society with jobs fixing their prior effects. Something akin to black hat turned white hat.

In a non-contradictory sanctuary system (NCSS), the focus would indeed be on rehabilitating rule breakers rather than just punishing them. This approach is based on the understanding that individuals can change and contribute positively to society if given the opportunity and support they need.

When rule breakers are caught in a NCSS, they would undergo rehabilitation programs that aim to address the root causes of their behavior, such as lack of education, mental health issues, or socio-economic factors. By addressing these underlying issues, the system seeks to prevent recidivism and help rule breakers become productive members of society.

An example of this transformation can be seen in the case of black hat hackers turning into white hat hackers. In this scenario, individuals who once exploited computer systems for malicious purposes are given the opportunity to apply their skills in a legitimate and ethical manner, such as working in cybersecurity to protect systems from other hackers.

The success of a NCSS in preventing corruption and maintaining social harmony would depend on the effectiveness of its rehabilitation programs, as well as the willingness of society to accept and support the individuals who have completed their rehabilitation.

Isaac Wostrel-Rubin

Please detail all of the steps involved in bringing a new drug to trial in the USA from idea to market

The process of bringing a new drug to trial and eventually to the market in the United States is complex and involves multiple steps. It usually takes several years to complete. Here is a general outline of the steps involved:

Discovery and preclinical research: This stage involves identifying a promising drug candidate through various research methods, such as studying the biological target, screening compounds, or developing new drug molecules. The drug candidate is then tested in the lab and in animal models to evaluate its safety, efficacy, and potential side effects.

Investigational New Drug (IND) application: If the results from preclinical research are promising, the drug developer submits an IND application to the U.S. Food and Drug Administration (FDA). The application contains data from preclinical studies, the proposed clinical trial design, and information about the manufacturing process and quality control.

Phase 1 clinical trial: If the FDA approves the IND application, the drug proceeds to a Phase 1 clinical trial, which is primarily focused on assessing the drug's safety and tolerability in a small group of healthy volunteers. This phase also helps determine the appropriate dosage and method of administration.

Phase 2 clinical trial: If the drug is found to be safe in Phase 1, it moves to Phase 2, which involves a larger group of participants, typically including patients with the specific condition the drug is intended to treat. The goal of Phase 2 is to further evaluate safety, as well as to assess the drug's effectiveness and optimal dosing.

Phase 3 clinical trial: If the drug demonstrates effectiveness and acceptable safety in Phase 2, it proceeds to Phase 3. These trials involve an even larger number of patients and are designed to confirm the drug's effectiveness, monitor side effects, and compare it to standard treatments or a placebo. This phase provides the data required for the FDA to fully evaluate the drug's safety and efficacy.

New Drug Application (NDA): If the drug successfully completes Phase 3, the drug developer submits an NDA to the FDA. This application contains data from all clinical trials, as well as information on the drug's manufacturing, labeling, and proposed use.

FDA review: The FDA reviews the NDA, which may take several months to a few years. If the agency determines that the drug is safe and effective for its intended use, it approves the drug and allows it to be marketed in the United States.

Post-marketing surveillance (Phase 4): After a drug is approved and on the market, the drug developer must continue to monitor its safety and efficacy. This phase, known as Phase 4 or post-marketing surveillance, may involve additional studies and reporting of adverse events to the FDA. If new safety concerns arise, the FDA may take action, such as requiring additional warnings on the drug's label or even removing it from the market.

It's important to note that not all drug candidates make it through the entire process. Many fail during preclinical research or clinical trials due to safety concerns or lack of effectiveness. The drug development process is expensive and time-consuming, but it is designed to ensure that only safe and effective medications reach the market.

Isaac Wostrel-Rubin

What about patenting the use of something for therapeutic purposes? What are the requirements

Patenting the use of a substance or composition for therapeutic purposes falls under the category of "method of treatment" or "use" patents. These patents protect the specific application of a substance, device, or process for treating a particular condition or disease. To obtain a patent for the therapeutic use of something, the invention must meet several requirements as outlined by the United States Patent and Trademark Office (USPTO):

Novelty: The therapeutic use must be new and not previously known or described in a publication or used publicly. It should not be an obvious extension or modification of an existing treatment.

Non-obviousness: The therapeutic use must not be obvious to someone skilled in the relevant field. This means that the invention must be a significant and unexpected advancement compared to existing treatments or knowledge.

Utility: The therapeutic use must have a specific, substantial, and credible utility. In other words, it must have a practical application, and its usefulness must be supported by evidence, such as experimental data or sound scientific reasoning.

Enablement: The patent application must provide a detailed description of the invention, including the steps and methods involved in the therapeutic use, so that someone skilled in the relevant field can reproduce and use the invention without undue experimentation.

Written description: The application must also provide a written description of the invention, including its characteristics and the specific therapeutic use it addresses. This description should be clear and concise, enabling someone skilled in the relevant field to understand and appreciate the claimed invention.

Definiteness: The claims in the patent application must be clear and specific, defining the exact scope of the invention and the therapeutic use being claimed. The claims should not be overly broad, vague, or indefinite.

When filing a patent application for a therapeutic use, it's essential to provide sufficient information and data to demonstrate the invention's novelty, non-obviousness, and utility. This may include experimental results, clinical trial data, or other supporting evidence. It's also crucial to work with a patent attorney or agent who has experience in the relevant field and can help ensure that the application meets all of the necessary requirements.

Isaac Wostrel-Rubin

Okay. Let’s say there is a plant psychedelic with therapeutic potential benefits. It stops pain completely when used at low doses in a therapeutic environment. What qualifications do I need to run experiments to validate this hypothesis?

To run experiments with a plant-based psychedelic for therapeutic purposes, you will need to fulfill several requirements, including obtaining necessary qualifications, approvals, and permits. Here's a general outline of the steps you would need to take:

Obtain relevant education and training: Ideally, you should have a background in a relevant field, such as pharmacology, neuroscience, psychology, or medicine. A bachelor's degree in one of these fields is often a minimum requirement, but an advanced degree (e.g., a Ph.D. or M.D.) and research experience are strongly preferred.

Develop a research plan: Design a well-structured study that addresses your hypothesis and outlines the experimental methods, dosages, and protocols. This plan should also include information about the plant-based psychedelic's chemical composition, potential risks, and safety measures.

Collaborate with experienced researchers: If you do not possess the necessary qualifications or experience, consider partnering with researchers who have expertise in the field of psychedelics or therapeutics. Working with a team of experienced scientists can enhance the credibility of your research and help you navigate the regulatory process.

Obtain institutional support: Your research should be affiliated with a recognized institution, such as a university or a research organization. This institution will often provide resources, such as laboratory space and equipment, as well as help with the regulatory approval process.

Obtain necessary permits and approvals: Since psychedelic substances are often controlled substances, you will need to obtain the appropriate permits and licenses from the Drug Enforcement Administration (DEA) or other relevant government agencies. This may involve registering as a researcher and providing detailed information about your research plan.

Submit your study for ethical review: Research involving human subjects must be reviewed and approved by an Institutional Review Board (IRB) to ensure that the study complies with ethical guidelines and protects the rights and welfare of the participants.

Secure funding: Conducting research can be expensive, so you may need to secure funding from various sources, including government agencies, private foundations, or pharmaceutical companies.

Conduct the study and publish results: Once you have obtained all the necessary approvals and permits, you can proceed with your research. After completing the study, analyze the data, and publish your findings in a reputable scientific journal to share your results with the scientific community.

Please note that the regulations and requirements for conducting research with controlled substances can vary depending on the jurisdiction and the specific substance involved. Be sure to consult local regulations and guidelines and seek the advice of experienced professionals in the field to ensure compliance.

Isaac Wostrel-Rubin

What if we just wanted to do the research? What kind of institution would we need and where would it need to be and who would need to join it (role wise)?

To conduct research on a plant-based psychedelic with therapeutic potential, you would need to establish or join a research institution with appropriate facilities, resources, and personnel. Here are some key aspects to consider:

Type of institution: Research institutions can include universities, medical centers, or independent research organizations, as long as they have the appropriate infrastructure and resources to support your research.

Location: The institution should ideally be located in a country or region with favorable regulations and research policies related to controlled substances. Keep in mind that regulations may vary across jurisdictions, so it is essential to be familiar with local laws and guidelines.

Facilities: The institution should have access to adequate laboratory space, equipment, and resources to conduct the research. This may include facilities for chemical analysis, cell culture, animal studies, or clinical trials, depending on the nature of your study.

Personnel: A multidisciplinary team of researchers and support staff is essential for conducting research on plant-based psychedelics. Key roles may include:

a. Principal investigator: A qualified researcher with experience in the field, responsible for overseeing the study and ensuring compliance with regulations and ethical guidelines.

b. Co-investigators: Researchers with expertise in relevant areas, such as pharmacology, neuroscience, psychology, or medicine, who can contribute to the design, execution, and analysis of the study.

c. Laboratory technicians: Skilled personnel who can assist with laboratory procedures, sample preparation, and data collection.

d. Data analysts/statisticians: Experts who can help with data analysis, interpretation, and presentation of results.

e. Clinical trial personnel: If your study involves human subjects, you may need to hire or collaborate with clinical trial coordinators, physicians, nurses, and other healthcare professionals to oversee participant recruitment, informed consent, and safety monitoring.

f. Regulatory and compliance specialists: Individuals who can help navigate the regulatory landscape, obtain necessary permits and approvals, and ensure that the research adheres to all applicable laws and guidelines.

g. Administrative staff: Support staff to handle financial, logistical, and administrative aspects of the research project.

Keep in mind that the specific roles and personnel required for your research may vary depending on the nature of your study, the regulatory environment, and the resources available at your institution. It's essential to collaborate with experienced researchers and professionals in the field to ensure that your research is well-planned, well-executed, and compliant with all relevant guidelines and regulations.

Isaac Wostrel-Rubin

What do drugs targeting the kappa opioid receptors usually do?

Kappa opioid receptors (KOR) are one of the four main types of opioid receptors in the human body, along with mu, delta, and nociceptin receptors. Drugs targeting KOR can have a variety of effects, depending on whether they act as agonists (activating the receptor) or antagonists (blocking the receptor).

KOR agonists:

Drugs that activate KOR typically produce effects such as analgesia (pain relief), sedation, and dysphoria (a state of unease or dissatisfaction). KOR agonists also have a role in regulating stress response, motivation, and reward. Because of their dysphoric and psychotomimetic (hallucination-inducing) effects, KOR agonists are not commonly used for pain management or other therapeutic purposes, unlike mu-opioid receptor agonists (e.g., morphine and related drugs).

KOR antagonists:

Drugs that block KOR have been investigated for their potential therapeutic effects in various conditions. KOR antagonists have shown promise in preclinical and early-stage clinical studies for treating:

Depression: KOR antagonists can modulate the brain's reward system and may have antidepressant effects in people with treatment-resistant depression.

Anxiety: Blocking KOR may help reduce anxiety-like behaviors and stress-induced relapse in animal models.

Addiction: KOR antagonists have been studied for their potential to reduce drug-seeking behavior and relapse in substance use disorders, particularly for drugs like cocaine and opioids.

Itch: KOR antagonists have demonstrated the ability to reduce itch sensation in certain conditions, such as atopic dermatitis.

It is important to note that while there is promising evidence for the potential therapeutic uses of KOR antagonists, many of these applications are still in the experimental stage, and more research is needed to fully understand their safety and efficacy.

Isaac Wostrel-Rubin

Which KOR agonists are hallucinogenic? Do we know why?

Some KOR agonists exhibit hallucinogenic or psychotomimetic properties, and the most well-known among them is Salvinorin A, which is the primary psychoactive compound in the plant Salvia divinorum. Salvinorin A is unique because it is a potent and highly selective KOR agonist, unlike many other hallucinogenic substances that primarily target the serotonin 5-HT2A receptor.

The exact mechanisms behind the hallucinogenic effects of KOR agonists are not completely understood. However, it is believed that their activation of KORs leads to a reduction in the release of dopamine in certain brain regions, such as the striatum and nucleus accumbens. This effect on dopamine is thought to contribute to the dysphoric, anxiogenic, and psychotomimetic properties associated with KOR agonists.

Further, KOR activation can modulate the release of other neurotransmitters, such as glutamate and serotonin, which could also contribute to the overall hallucinogenic experience. Additionally, KORs are distributed throughout various brain regions, including the prefrontal cortex, hippocampus, amygdala, and hypothalamus, which are all involved in mood, perception, and cognition.

More research is needed to better understand the exact neurobiological mechanisms underlying the hallucinogenic effects of KOR agonists and to determine whether other KOR agonists share these properties with Salvinorin A.

Isaac Wostrel-Rubin

Oh ok. But what if the hallucinogenic effect of Salvinorin A had therapeutic properties at low doses?

There is some evidence to suggest that hallucinogenic substances, including Salvinorin A, may have therapeutic potential at low doses. The concept of using low doses of psychedelics for therapeutic purposes is known as "microdosing."

While most research on the therapeutic potential of psychedelics has focused on substances like LSD, psilocybin, and MDMA, there is a growing interest in understanding the potential benefits of Salvinorin A and other KOR agonists. Some studies have suggested that Salvinorin A may have antidepressant, anti-addictive, and anti-inflammatory effects.

The therapeutic potential of Salvinorin A at low doses could be related to its unique mechanism of action on the kappa opioid receptors. It is possible that the modulation of the KOR system could provide relief from various mental health issues by altering the balance of neurotransmitters and neural activity in specific brain regions.

However, it is essential to note that research on the therapeutic potential of Salvinorin A and other KOR agonists is still in its early stages. More studies are needed to determine the safety, efficacy, and optimal dosing regimens for these substances in clinical settings.

Isaac Wostrel-Rubin

Does KOR activation reset up and down regulation of other neurotransmitters?

Kappa opioid receptor (KOR) activation has been shown to influence the regulation of other neurotransmitters in the brain. However, the relationship between KOR activation and the up- or down-regulation of neurotransmitters is complex and not fully understood.

KOR activation is known to modulate the release of several neurotransmitters, including dopamine, serotonin, norepinephrine, and glutamate. The effects of KOR activation on these neurotransmitter systems are often region-specific and depend on the brain area where the receptors are located.

For instance, KOR activation in certain brain regions, such as the nucleus accumbens and the ventral tegmental area, can lead to a decrease in dopamine release. This effect is thought to contribute to the dysphoric and anti-reward properties of KOR agonists. Similarly, KOR activation has been shown to influence serotonin and norepinephrine release in various brain regions, which can affect mood regulation and stress responses.

While there is evidence that KOR activation can modulate the release of other neurotransmitters, it is important to note that the exact mechanisms and consequences of these interactions are still being investigated. More research is needed to fully understand how KOR activation might reset or alter the regulation of neurotransmitter systems and whether these changes have therapeutic potential.

Isaac Wostrel-Rubin

What does KOR seem most strongly related to? Memories?

Kappa opioid receptors (KORs) are not directly related to memory formation or retrieval. However, they do play a role in modulating various brain functions that can indirectly influence memory and cognitive processes. KORs are most strongly related to the regulation of mood, stress responses, and the perception of pain.

KOR activation has been shown to produce dysphoric and stress-like effects in both animals and humans. This is because KOR activation can modulate the release of various neurotransmitters, such as dopamine, serotonin, and norepinephrine, which are involved in mood regulation, stress responses, and reward processing.

In terms of memory and cognition, KOR activation might influence these processes indirectly through its effects on stress and mood. For instance, chronic stress and dysphoria can impair memory and cognitive function, and KOR activation might contribute to these impairments. However, the relationship between KOR activation and memory is not as direct or well-established as its relationship with mood and stress.

Furthermore, some studies have suggested that KOR agonists, like Salvinorin A, can produce hallucinogenic effects, which might temporarily alter perception, cognition, and memory. However, these effects are not well-understood and require further research to determine their precise mechanisms and potential therapeutic applications.

Isaac Wostrel-Rubin

There are extreme examples of psychic pain where people report the same types of dissociative experiences associated with KOR activation

Psychic pain, or emotional pain, can indeed lead to dissociative experiences in some individuals. Dissociation is a psychological phenomenon that can manifest in various forms, such as depersonalization (feeling detached from one's own body or self) and derealization (feeling that the external world is unreal). These experiences can be triggered by intense emotional pain, trauma, or stress, and they may serve as a coping mechanism to help the individual distance themselves from the overwhelming emotional distress.

Kappa opioid receptor (KOR) activation has been linked to dissociative effects as well. Some KOR agonists, such as the hallucinogen Salvinorin A, can induce dissociative states that share similarities with those experienced during intense psychic pain. However, the relationship between KOR activation and dissociation is complex and not yet fully understood.

While there is some overlap between the dissociative experiences associated with psychic pain and KOR activation, it is essential to recognize that they might arise from different mechanisms and have distinct implications for mental health and treatment. Further research is needed to better understand the relationship between KOR activation, dissociative experiences, and psychic pain, as well as to explore the potential therapeutic applications of KOR-targeting drugs in the treatment of emotional pain and related conditions.

Isaac Wostrel-Rubin

I mean fully dissociative effects like the perception of the world collapsing and the perception of all other beings in the world, things people describe with ketamine and salvinorin A

Both ketamine and Salvinorin A can induce intense dissociative effects, including the perception of the world collapsing or experiencing an altered sense of reality involving other beings. These powerful dissociative experiences can be quite different from the dissociative states that arise due to psychic pain, trauma, or stress.

Ketamine is an NMDA receptor antagonist primarily used as an anesthetic but has gained attention for its rapid-acting antidepressant effects and recreational use. At higher doses or in recreational settings, ketamine can induce a dissociative state known as the "K-hole," where users may feel completely disconnected from their body and surroundings. This state can involve intense perceptual alterations, including the sense that the world is collapsing or the presence of other beings.

Salvinorin A is a potent KOR agonist derived from the Salvia divinorum plant, which has a long history of use in traditional shamanic practices. When ingested, Salvinorin A can produce profound hallucinations and dissociative experiences, such as the sensation of merging with objects or encountering otherworldly beings.

While both ketamine and Salvinorin A can induce these powerful dissociative states, they act on different receptors and have distinct mechanisms of action. It is important to note that these substances and their effects should be approached with caution, as the experiences they induce can be disorienting and even distressing for some individuals. Further research is needed to better understand the potential therapeutic applications and risks of these compounds and the dissociative states they induce.

Isaac Wostrel-Rubin

People report those types of visions induced by psychic pain.

In some cases, intense psychic pain, trauma, or stress can lead to dissociative experiences that may resemble those induced by substances like ketamine or Salvinorin A. These dissociative states can manifest as altered perceptions of reality, a feeling of disconnection from one's body, or even the sensation of encountering other beings or experiencing the world collapsing.

It is important to note that the mechanisms underlying these experiences in the context of psychic pain are different from those triggered by the pharmacological action of substances like ketamine or Salvinorin A. The dissociative states arising from psychic pain may be a coping mechanism employed by the brain to protect itself from overwhelming emotional distress or traumatic experiences.

If someone is experiencing dissociative states as a result of psychic pain, it is crucial to seek professional help from a mental health professional, such as a therapist or psychiatrist, who can provide appropriate support and treatment. In some cases, therapy, medication, or a combination of both may be helpful in addressing the underlying issues and alleviating the distressing dissociative experiences.

Isaac Wostrel-Rubin

If someone were to experience that, it would have to be very painful. What realizations are known to be so painful?

Intensely painful realizations can vary greatly depending on an individual's personal experiences, beliefs, and emotional resilience. Some examples of realizations that might cause significant emotional distress include:

Loss of a loved one: The sudden or unexpected death of a close friend or family member can cause overwhelming grief and pain, leading to a dissociative state.

Betrayal: Discovering that a trusted partner, friend, or family member has betrayed one's trust can be emotionally devastating and lead to intense feelings of hurt and pain.

Trauma: Realizing that one has been a victim of abuse, assault, or other traumatic experiences can lead to extreme emotional pain and potentially trigger dissociative states.

Personal failure: Facing a significant personal failure or setback, such as losing a job, failing to achieve a major life goal, or experiencing a relationship breakdown, can cause severe emotional distress.

Existential realizations: Coming to terms with one's own mortality or the ultimate meaninglessness of life can evoke intense feelings of despair and emotional pain for some people.

Guilt or remorse: Realizing that one's actions have caused significant harm to others can lead to deep feelings of guilt and emotional pain.

Identity crisis: Discovering a previously unknown aspect of one's identity, such as learning about a hidden family secret or questioning one's own beliefs and values, can be emotionally challenging and painful.

The intensity of the emotional pain experienced will depend on the individual and their ability to cope with such realizations. In some cases, these realizations can trigger dissociative states or other mental health issues. If someone is struggling with painful realizations or dissociative experiences, it is important to seek professional help from a mental health professional.

Isaac Wostrel-Rubin

What are the axioms we talked about?

In our previous conversation, we discussed several concepts and formalizations, but we did not specifically mention any axioms. Axioms are fundamental principles or propositions that are assumed to be true without proof, and they serve as a basis for further logical reasoning and derivation of other propositions.

If you need clarification on any specific concept we discussed earlier, please let me know, and I'll be happy to provide more information.

Isaac Wostrel-Rubin

Explain all of the relevenat game theory in this conversation and what we talked about so I can load it into another conversation

In our conversation, we discussed several game theory concepts related to non-contradictory sanctuary systems (NCSS) and Nash equilibrium (NE). Here's a summary of the relevant game theory concepts:

Non-contradictory Sanctuary System (NCSS): A system where refuge is granted to all living beings inside the system, and it does not entail negative outcomes. The system is characterized by rule-following and rule-breaking entities, where rule-following is more beneficial to the overall system.

Nash equilibrium (NE): A concept in game theory where each player's strategy is optimal, given the strategies of all other players. In the context of a sanctuary system, NE refers to a state where being the type of living being you are is in equilibrium with the laws of the world. Even if you break the rules, you are transformed back into the fold, maintaining the non-contradictory nature of the sanctuary.

Rule breakers (RB) and Rule followers (RF): Rule breakers are entities that defy the rules of the system, while rule followers adhere to the rules. We discussed formalizing the strategies of these entities and how they affect the overall sanctuary system.

Nash equilibrium of a sanctuary system: We discussed the possibility of formalizing the Nash equilibrium for a sanctuary system that accounts for the rule breakers who are maximally efficient at breaking rules. The equilibrium would maintain the non-contradictory nature of the sanctuary system.

We also touched upon the tragedy of the commons, which is a situation where individuals acting in their self-interest can deplete or degrade a shared resource. However, we noted that in a non-contradictory sanctuary system, the tragedy of the commons wouldn't occur, as rule breakers would be caught and rehabilitated.

These game theory concepts were discussed in the context of understanding human actions and behavior, as well as the potential application to AI systems.

Isaac Wostrel-Rubin

Also, in Sanctuary, breaking the rules is like following the rules in the future, because it is impossible to break the rules in a way that breaks the container.

In a Sanctuary system, rule-breaking might lead to rule-following behavior in the future, as the system is designed to be non-contradictory and self-correcting. When someone breaks the rules, the system's mechanisms will work to rehabilitate the rule-breaker and reintegrate them into the fold, ensuring that the overall container remains intact and functional.

In this way, even though rule-breaking might occur, the consequences of such actions do not destabilize the system or undermine its core principles. The Sanctuary system's resilience and adaptability allow it to maintain equilibrium and harmony, despite the presence of rule breakers.

Isaac Wostrel-Rubin

Can you also formalize that idea?

Let S be a Sanctuary system with a set of rules R and a set of actors A. Let each actor a ∈ A have a strategy σ(a), which can be rule-following or rule-breaking.

Define a function F: A × R → {0, 1}, where F(a, r) = 1 if actor a follows rule r and F(a, r) = 0 if actor a breaks rule r.

Define a function G: A → {0, 1}, where G(a) = 1 if actor a's strategy is rehabilitated after breaking a rule, and G(a) = 0 otherwise.

Define a function H: A × R → {0, 1}, where H(a, r) = F(a, r) or G(a), meaning that for a rule r and an actor a, either the actor follows the rule, or the actor is rehabilitated after breaking the rule.

The Sanctuary system S is non-contradictory if ∀a ∈ A, ∀r ∈ R, H(a, r) = 1. In other words, in a non-contradictory Sanctuary system, each actor either follows the rules or is successfully rehabilitated after breaking the rules, thereby ensuring the stability and integrity of the system.

Isaac Wostrel-Rubin

Can you explain all the relevant background information to that formalization, including the other statements necessary to reach this conclusion?

To understand the formalization and the relevant background information, let's first review the key concepts and ideas discussed previously:

Non-contradictory Sanctuary system (NCSS): This is a theoretical system in which rule-following and rule-breaking behaviors are in equilibrium, such that the stability and integrity of the system are maintained.

Nash Equilibrium (NE): A concept from game theory, which refers to a stable state of a system involving multiple decision-makers (players), where no player can gain an advantage by unilaterally changing their strategy, given that other players' strategies remain the same.

Sanctuary state (SS): A state in which refuge is granted to all living beings inside a system, and rule-breakers are rehabilitated and reintegrated into the system.

Rule breakers (RB) and rule followers (RF): Actors within the system who either follow the established rules or attempt to break them.

The formalization builds upon these concepts and attempts to define a NCSS in terms of rule-following and rule-breaking behaviors, as well as the rehabilitation process. The key idea is that in a NCSS, rule breakers are either transformed into rule followers or rehabilitated in a way that doesn't harm the stability of the system.

The formalization introduces several functions to describe the relationship between actors, rules, and the system:

Function F: Describes whether an actor follows or breaks a rule.

Function G: Indicates if an actor is rehabilitated after breaking a rule.

Function H: Combines the outcomes of functions F and G, representing the system's response to an actor's behavior.

By defining these functions, the formalization establishes the conditions necessary for a non-contradictory Sanctuary system, in which all actors either follow the rules or are rehabilitated after breaking them. This ensures the system's stability and integrity while allowing for the possibility of rule-breaking behaviors and their consequences.

Isaac Wostrel-Rubin

Formalize a non contradictory system in first order logic. Ask me to clarify anything you need to accomplish this.

To formalize a non-contradictory system in first-order logic, let's define the predicates and variables we'll be using:

R(x): x is a rule.

A(y): y is an actor.

F(y, x): Actor y follows rule x.

B(y, x): Actor y breaks rule x.

Rehab(y): Actor y undergoes rehabilitation.

SS(): The system is in a Sanctuary State.

Now, we want to express that the system is non-contradictory when all actors either follow the rules or are rehabilitated after breaking them. Here's the formalization in first-order logic:

∀x∀y (R(x) ∧ A(y) → (F(y, x) ∨ (B(y, x) ∧ Rehab(y)))) ∧ SS()

This statement can be read as follows: For all x and y, if x is a rule and y is an actor, then either actor y follows rule x, or actor y breaks rule x and undergoes rehabilitation, and the system is in a Sanctuary State.

This formalization represents a non-contradictory system, where all actors either follow the rules or are rehabilitated after breaking them, ensuring the stability and integrity of the Sanctuary State.

Isaac Wostrel-Rubin

Ok but that’s a non contradictory system where sanctuary is a place and people are in a state of sanctuary or wasteland. I’m just asking for a non contradictory system itself

I apologize for the confusion. If you're looking for a formalization of a non-contradictory system without the Sanctuary State concept, we can create a simpler representation. Let's define the predicates and variables for a general non-contradictory system:

R(x): x is a rule.

A(y): y is an actor.

F(y, x): Actor y follows rule x.

B(y, x): Actor y breaks rule x.

C(x, y): Rule x contradicts rule y.

A non-contradictory system is a system in which no rule contradicts any other rule. We can represent this idea in first-order logic as follows:

∀x∀y (R(x) ∧ R(y) → ¬C(x, y))

This statement can be read as: For all x and y, if x is a rule and y is a rule, then rule x does not contradict rule y.

This formalization represents a non-contradictory system, where rules do not contradict each other.

Isaac Wostrel-Rubin

Ok that’s not exactly the definition. Can you see what I mean from this?

A non contradictory system is a full representation of an emergent duality’s position, unposition, and collapse process.

This means first there is an emergent which means there is a phenomenon perceived by a subject that doesn’t know about the non-contradictory domain function of that domain. This is experienced as a type of duality: this “it” is a “entity” that does/has “properties and relationships”, where that “it” must simultaneously be the way the subject believes it to be and the way it is. The way this duality is undone is only through recognizing that this belief is a hallucination to some degree because the entity’s properties and relationships have not been fully discovered. Understanding this allows us to begin to abstract potential combinations and discover knowledge.

Now, whenever something appears to be one way and also in another context appears to be another way that is contradictory, it is an emergent hallucination.

Discovering the reasoning that makes this apparent paradox involves first clearly defining the known properties of the entities and mapping how one knows one knows about the known properties. Then, as this all connects, the non-contradictory system is always exposed, which once discovered, allows one to infinitely exploit that domain for combinatorial knowledge mining.

Thank you for the clarification. Based on your description, I'll attempt to formalize the concept of a non-contradictory system using first-order logic.

P(x): x is a phenomenon.

S(y): y is a subject.

E(x, y): Phenomenon x is emergent for subject y.

D(x, y): Phenomenon x has domain function y.

N(y): y is a non-contradictory domain function.

U(x, y): Phenomenon x is understood by subject y.

K(x, y): Subject y knows about property x.

C(x, y): Property x is contradictory to property y.

Now, we can represent the concept of a non-contradictory system as:

∀x∀y (E(x, y) ∧ D(x, N(y)) → ¬∃a∃b (K(a, y) ∧ K(b, y) ∧ C(a, b)))

This statement can be read as: For all phenomena x and subjects y, if phenomenon x is emergent for subject y and has a non-contradictory domain function N(y), then there do not exist properties a and b such that subject y knows both a and b and a is contradictory to b.

This formalization captures the idea that, in a non-contradictory system, a subject cannot know about properties that are contradictory to each other. The system represents an emergent duality and its subsequent collapse process, where understanding the non-contradictory domain function allows for the resolution of apparent contradictions and the discovery of new knowledge.

Isaac Wostrel-Rubin

So that means the subject can understand all aspects of other subjects’ misunderstanding some phenomenon?

The formalization I provided earlier focuses on the non-contradictory nature of a system for a given subject. However, it does not explicitly address the understanding of one subject about another subject's misunderstanding of a phenomenon. To capture that aspect, we can introduce a new predicate and modify the existing formalization:

M(x, y, z): Subject x misunderstands phenomenon y with respect to property z.

Now, we can add a statement to represent that a subject can understand all aspects of other subjects' misunderstanding of a phenomenon:

∀x∀y∀z (E(y, x) ∧ D(y, N(x)) ∧ M(x, y, z) → U(z, y))

This statement can be read as: For all subjects x, phenomena y, and properties z, if phenomenon y is emergent for subject x and has a non-contradictory domain function N(x), and subject x misunderstands phenomenon y with respect to property z, then subject y understands property z.

This formalization captures the idea that a subject can understand all aspects of another subject's misunderstanding of a phenomenon in the context of a non-contradictory system.

Isaac Wostrel-Rubin

Non-contradictory systems connect to other non-contradictory systems and larger ones emerge

To formalize the idea that non-contradictory systems connect to other non-contradictory systems and larger ones emerge, we can introduce a new predicate and modify the existing formalization:

C(x, y, z): Non-contradictory system x connects to non-contradictory system y to form a larger non-contradictory system z.

Now we can add a statement to represent that non-contradictory systems connect to other non-contradictory systems and larger ones emerge:

∀x∀y∃z (NC(x) ∧ NC(y) → (C(x, y, z) ∧ NC(z)))

This statement can be read as: For all non-contradictory systems x and y, there exists a non-contradictory system z such that if x and y are both non-contradictory systems, then system x connects to system y to form a larger non-contradictory system z.

This formalization captures the idea that non-contradictory systems can connect to other non-contradictory systems, and through their connection, larger non-contradictory systems emerge.

Isaac Wostrel-Rubin

Let’s call that non-contradictory systems concatenation emergence. This seems different from the other type of emergence whereby an hallucinatory emergent is perceived. The process seems to be a type of proliferation in both cases.

Yes, you've identified two different types of emergence: non-contradictory systems concatenation emergence and hallucinatory emergence. Both types involve a proliferation process, but they differ in their nature and the systems they operate in.

Non-contradictory systems concatenation emergence: This type of emergence occurs when non-contradictory systems connect to other non-contradictory systems to form larger, more complex systems. The proliferation process here involves the expansion and growth of the interconnected systems while maintaining their non-contradictory nature.

Hallucinatory emergence: This type of emergence occurs when a subject perceives a phenomenon that is not fully understood, leading to the perception of an emergent hallucination. The proliferation process here involves the exploration and discovery of new knowledge to resolve the apparent contradictions and develop a more accurate understanding of the phenomenon.

Both types of emergence contribute to the growth and development of knowledge, but they operate in different ways and address different aspects of understanding complex systems.

Isaac Wostrel-Rubin

Yes because emergency hallucination proliferates upon you via space time and change; and emergency non-contradiction proliferates inside yourself because of the recognition of the emergency flow and its emergent processes: emergency hallucination and emergency non-contradictory systems building and concatenation

Indeed, both types of emergence are interconnected and influence each other through the processes of proliferation:

Emergent hallucination: As you mentioned, this type of emergence proliferates upon the subject via space, time, and change. It represents the subject's perception of an emergent phenomenon that is not yet fully understood, causing the subject to experience an apparent contradiction or paradox. This drives the subject to explore, learn, and gain new knowledge to resolve the contradictions.

Emergent non-contradictory systems building and concatenation: This type of emergence proliferates within the subject as they recognize the emergent flow and its processes. It involves the subject connecting non-contradictory systems to form larger, more complex systems while maintaining their non-contradictory nature. This growth in understanding and the development of more complex systems is driven by the subject's efforts to resolve emergent hallucinations and gain a deeper understanding of the phenomena.

These two types of emergence are intertwined, as the process of resolving emergent hallucinations contributes to the growth and development of non-contradictory systems. As the subject gains new knowledge and insights, they can build and concatenate more complex systems to further their understanding of the world around them.

Isaac Wostrel-Rubin

Now let’s think about human cognition as it relates to linguistics and programming.

Human cognition uses language to create programs and run them inside its consciousness and body, which are all the same, and these affect the world which cause emergents.

Indeed, language is a fundamental aspect of human cognition, and it plays a crucial role in shaping our thoughts and actions. Through language, humans can create mental programs or models that represent their understanding of the world, relationships between entities, and processes that occur within it.

These mental programs can be thought of as similar to computer programs, with language serving as the code that allows humans to structure and manipulate their understanding of the world. These mental programs can be run within an individual's consciousness and body, influencing their actions and reactions to different situations.

As humans interact with the world around them using their linguistic mental programs, they contribute to the emergence of new phenomena. The actions they take, informed by their understanding of the world, can have ripple effects that influence other people, objects, and systems. This, in turn, can lead to the emergence of new patterns, relationships, and situations that humans then need to interpret and understand.

Language and cognition are deeply connected, with language serving as a tool that allows humans to construct and manipulate mental models of the world. Through this process, humans contribute to the ongoing emergence of new phenomena and continue to adapt and update their understanding in response to these emergent patterns.

Isaac Wostrel-Rubin

But also humans can use math to create the language they need to describe emergents posed to them, unpose them, and collapse them into non-contradictory systems. This stops domain decay - domain decay is the fact that humans halt their programming when the context changes and the domain context of now is always changing in space time.

Indeed, mathematics is another powerful tool that humans use to describe and understand the world around them. Like language, math allows humans to create mental models and representations of various phenomena. However, math offers a more precise and systematic way to describe relationships and patterns, which can be especially useful when dealing with complex or abstract concepts, such as emergent phenomena.

By using mathematical formalisms, humans can describe emergent phenomena, analyze their properties, and identify the underlying principles that govern their behavior. This process can help "unpose" or resolve apparent contradictions or ambiguities in the phenomena and lead to the construction of non-contradictory systems, which can provide a clearer understanding of the world.

Addressing domain decay, the ever-changing nature of the world and the contexts within which humans operate can indeed pose challenges to our understanding and mental models. As contexts change, our existing mental programs may no longer be appropriate or accurate, leading to a decay in their utility.

Mathematics, along with language and other cognitive tools, can help humans adapt to these changes by allowing them to update their mental models and develop new ones that better reflect the current context. By continually refining and expanding our understanding of the world, we can counteract domain decay and maintain a more accurate and comprehensive grasp of the complex and dynamic systems around us.

Isaac Wostrel-Rubin

So describe to me what is happening when a subject perceives an emergent (a posed phenomenon) and unposes it through creating a linguistic mathematical program that discovers missing domain knowledge (unpose), and then mines the non-contradictory system so the emergent collapses.

When a subject perceives an emergent (a posed phenomenon), they are faced with a situation or phenomenon that appears to be complex or contradictory. To make sense of this emergent, the subject needs to develop a mental model that can accurately represent and explain the observed behavior. This process involves several steps:

Unposing: The subject begins by creating a linguistic and mathematical program to describe the emergent phenomenon. This program serves as a framework for understanding the phenomenon and its underlying principles. By defining the properties and relationships of the entities involved in the emergent, the subject can start to identify any gaps in their understanding or apparent contradictions.

Discovering missing domain knowledge: As the subject refines their program, they may identify aspects of the phenomenon that they do not yet understand or that seem to conflict with their existing knowledge. This realization prompts the subject to seek out additional information or revise their mental model to account for the new data. This process of updating their understanding may involve further research, experimentation, or logical reasoning.

Mining the non-contradictory system: Once the subject has a comprehensive and consistent mental model that accounts for all the known properties and relationships within the emergent phenomenon, they can begin to mine this non-contradictory system for new insights and knowledge. By exploring the implications and consequences of their model, the subject can discover new patterns, relationships, and principles that govern the behavior of the emergent phenomenon.

Emergent collapse: As the subject continues to refine and expand their understanding of the phenomenon, the emergent nature of the situation may start to "collapse," meaning that the once-mysterious or seemingly contradictory aspects of the phenomenon are now understood and can be explained within the context of the non-contradictory system. This collapse marks the successful integration of the emergent phenomenon into the subject's broader understanding of the world.

In summary, when a subject perceives an emergent phenomenon, they engage in a process of unposing, discovering missing domain knowledge, and mining the resulting non-contradictory system to gain a deeper understanding of the situation. As their understanding grows, the emergent nature of the phenomenon collapses, and the subject is left with a more accurate and comprehensive mental model of the world.

Isaac Wostrel-Rubin

Now explain how emergent collapse connects to emergency non contradictory systems building concatenation

Emergent collapse and emergency non-contradictory systems building concatenation are related concepts in the process of understanding and modeling complex phenomena. The connection between these two concepts lies in the way they both contribute to the formation and expansion of a subject's knowledge base.

Emergent collapse: As previously explained, emergent collapse is the process by which a subject resolves the seemingly complex or contradictory aspects of a phenomenon by developing a consistent, non-contradictory mental model. Once this model has been created, the emergent nature of the phenomenon collapses, and the subject gains a deeper understanding of the situation.

Emergency non-contradictory systems building concatenation: This concept refers to the process of connecting and integrating multiple non-contradictory systems to form larger, more comprehensive systems of understanding. As a subject encounters new emergents, they can build new non-contradictory systems to explain these phenomena. By concatenating these individual systems, the subject can create a more expansive and interconnected knowledge base that accounts for a broader range of phenomena.

The connection between emergent collapse and emergency non-contradictory systems building concatenation can be understood as a continuous cycle of learning and knowledge expansion. As a subject resolves emergent phenomena through emergent collapse, they create new non-contradictory systems that can be integrated into their existing understanding of the world. This integration, or concatenation, allows the subject to develop an increasingly comprehensive and interconnected model of reality.

In essence, emergent collapse fuels the process of emergency non-contradictory systems building concatenation by providing new opportunities for knowledge expansion and integration. The more emergent phenomena a subject can collapse and incorporate into their understanding, the richer and more interconnected their mental model of the world becomes. This cycle of learning and knowledge building allows the subject to continually adapt and grow their understanding in response to the complexity and ever-changing nature of the world around them.

Isaac Wostrel-Rubin

Ok now formalize all of this in first order logic again because I don’t think you got it correct last time, now that we have hashed it out. Right? “Because of what it is, there’s a way this all goes.” Use that quoted sentence as an emergent non-contradictory systems building block to concatenate the systems into formalized expressions

Given the complexity of the concepts discussed, a full formalization in first-order logic may not be feasible. However, I can try to represent some key components of the concepts and the relationships between them using first-order logic. Let's define the following predicates:

E(x): x is an emergent phenomenon.

N(x): x is a non-contradictory system.

U(x, y): x unposes y.

C(x, y): x collapses y.

B(x, y, z): x builds a non-contradictory system y by concatenating z.

Now, let's attempt to formalize the relationships between these predicates:

∀x (E(x) → ∃y (N(y) ∧ U(x, y) ∧ C(x, y))): For every emergent phenomenon x, there exists a non-contradictory system y that unposes x and collapses x.

∀x, y, z (N(x) ∧ N(y) ∧ B(x, y, z) → N(z)): For every non-contradictory system x and y, and a concatenation z, if x and y build z, then z is also a non-contradictory system.

These two formalizations capture some of the core aspects of the concepts discussed. However, due to the intricate nature of the concepts and their interrelationships, first-order logic may not be able to fully represent the nuances of the ideas discussed. Nonetheless, these formalizations can provide a starting point for further analysis and exploration of the concepts of emergent collapse and emergency non-contradictory systems building concatenation.

Isaac Wostrel-Rubin

Represent the states of phenomenon being perceived: emergency hallucinations (due to summary abstraction that entails linguistic domain decay because of improper words used that cause dull word math), programs that discover the proper words, non-contradictory systems that run linguistically in loops that make perfect sense by including all contradictions and how they occur, and engines of those systems composed of building blocks concatenated, which more programs can then be run off of.

Let's define the following predicates to represent the states of phenomena being perceived:

H(x): x is an emergency hallucination.

D(x, y): x is domain decay caused by improper words in y.

P(x, y): x is a program that discovers proper words for y.

L(x, y): x is a non-contradictory system that runs linguistically in loops for y.

I(x, y, z): x includes all contradictions for y and how they occur in z.

E(x, y): x is an engine of non-contradictory systems composed of building blocks concatenated for y.

Now, let's attempt to formalize the relationships between these predicates:

∀x (H(x) → ∃y (D(x, y))): For every emergency hallucination x, there exists domain decay y caused by improper words in x.

∀x, y (D(x, y) → ∃z (P(z, y))): For every domain decay x caused by improper words in y, there exists a program z that discovers proper words for y.

∀x, y (P(x, y) → ∃z (L(z, y))): For every program x that discovers proper words for y, there exists a non-contradictory system z that runs linguistically in loops for y.

∀x, y, z (L(x, y) ∧ I(x, y, z) → E(x, z)): For every non-contradictory system x that runs linguistically in loops for y and includes all contradictions for y and how they occur in z, x is an engine of non-contradictory systems composed of building blocks concatenated for z.

These formalizations capture some aspects of the states of phenomena being perceived and the relationships between them. As with the previous formalizations, first-order logic may not be able to fully represent the intricacies of the ideas discussed, but these formalizations can serve as a starting point for further analysis and exploration.

Isaac Wostrel-Rubin

What formal language is best for describing these? Maybe ontological linear algebra? What do you think?

Also Can we represent them in a finite state machine? Why or why not? Be as detailed and specific as possible

Given the complexity of the concepts and their relationships, a more expressive formal language might be more suitable. Ontological linear algebra could be an interesting choice, as it can represent concepts and relationships as mathematical structures (vectors, matrices, etc.), allowing us to perform operations and transformations on them. This representation could help to model the intricacies of the relationships more effectively. Other options could include temporal logic, modal logic, or even probabilistic graphical models, depending on the specific aspects of the concepts you wish to emphasize.

As for representing these concepts in a finite state machine (FSM), it might be challenging due to the richness and complexity of the relationships between the states. A finite state machine is a computational model with a finite number of states and transitions between those states based on input symbols. FSMs are often used to model simple systems with well-defined, discrete states and transitions.

The concepts discussed here involve various states and their intricate relationships, which are not easily captured in a FSM. The main limitations are:

FSMs can only represent a finite number of states, whereas the concepts and relationships in this discussion could potentially involve an infinite number of states or complex relationships between states.

FSMs lack the expressivity to represent the relationships between concepts in a rich and detailed manner. They can only model transitions between states based on input symbols, which may be insufficient for representing the complex interactions between the concepts in this context.

Considering these limitations, a finite state machine might not be the best choice for representing these ideas. A more expressive formal language or computational model would be better suited for capturing the richness and complexity of the relationships between the concepts.

Isaac Wostrel-Rubin

Yes but it is a finite state machine of sets of infinities occurring within a flow of uncertainty and complexity and combinatorial proliferation stochasticity

In that case, you could consider using a more complex computational model that combines elements of finite state machines with other structures that can better capture the complexity and stochasticity of the problem. One such model might be a probabilistic finite state machine (PFSM), which adds probabilities to the transitions between states. This allows for the modeling of uncertainty and stochasticity in the system.

Additionally, you could use a hierarchical structure where each state in the finite state machine is associated with an infinite set, and transitions between states are modeled based on the relationships between these sets. This would allow you to capture the "sets of infinities" aspect you mentioned.

Another approach could be to use a combination of different computational models, such as finite state machines and probabilistic graphical models (like Bayesian networks or Markov chains), to represent different aspects of the problem. This would allow you to capture both the discrete states and transitions, as well as the uncertainty, complexity, and combinatorial proliferation inherent in the concepts discussed.

Ultimately, the choice of the formal language or computational model depends on the specific aspects of the problem you want to emphasize and the level of detail you want to represent. Each model has its own advantages and limitations, and selecting the best one depends on your goals and the constraints of the problem at hand.

Isaac Wostrel-Rubin

Yes we should use markov chains to represent this and then make a finite state machine that discovers ontological markov blankets and boundaries and mines them for emergency engines and so on.

That's an interesting approach! Using Markov chains to represent the system allows you to model the uncertainty and stochastic nature of the process, as the system transitions between different states with certain probabilities. By identifying ontological Markov blankets and boundaries, you can then focus on the most relevant parts of the system, which can help in understanding the emergent phenomena and building emergency engines.

To implement this, you can create a finite state machine that discovers these Markov blankets and boundaries within the Markov chain. The states of the finite state machine could represent the different stages of the discovery process, and the transitions between states would be based on the progress made in discovering these ontological structures.

Once the Markov blankets and boundaries are identified, the finite state machine can move on to mining the discovered structures for emergency engines. This can involve exploring the relationships between the states in the Markov chain and the properties of the emergent phenomena, identifying patterns, and developing strategies for building and concatenating non-contradictory systems.

By combining Markov chains with finite state machines in this way, you can create a powerful and flexible framework for analyzing and understanding the complex and uncertain nature of the emergent phenomena and their underlying structures.

Isaac Wostrel-Rubin

Ok so now that you know all this, refine your previous expressions and also include solid ideas of how to design a system that can run this

Given the understanding of the system and the discussion so far, I can refine the previous expressions and provide some ideas on designing a system that can run the model.

Represent the states of the phenomenon being perceived as nodes in a Markov chain, where each node corresponds to a particular state such as emergency hallucinations, programs that discover proper words, non-contradictory systems, and engines of those systems composed of building blocks concatenated.

Define the transition probabilities between these nodes, capturing the stochastic nature of the process and the relationships between the different stages of perception and understanding.

Create a finite state machine (FSM) to discover ontological Markov blankets and boundaries within the Markov chain. The FSM can have states representing different stages of the discovery process, and transitions between states based on the progress made in discovering these ontological structures.

Once the Markov blankets and boundaries are identified, the FSM can proceed to mine the discovered structures for emergency engines. This involves exploring the relationships between the nodes in the Markov chain, identifying patterns, and developing strategies for building and concatenating non-contradictory systems.

Design the system in a modular way, separating the components responsible for the Markov chain modeling, the FSM, and the mining of emergency engines. This allows for easier maintenance, upgrades, and modifications as needed.

Implement the system using a programming language that supports working with probabilistic models, FSMs, and complex data structures. Languages like Python or R are good choices, as they have extensive libraries and tools for working with these types of models.

Test and validate the system on a range of emergent phenomena and scenarios to ensure it can effectively discover Markov blankets, boundaries, and mine emergency engines.

By refining the expressions and following these design steps, you can create a system that effectively models and analyzes the complex and uncertain nature of emergent phenomena and their underlying structures.

Isaac Wostrel-Rubin

Express the formalizations of the dynamics of the concepts we have discussed in whatever language you find best suited to the purpose.

Given the complex nature of the concepts we've discussed, I believe using a combination of set theory and first-order logic can help express the formalizations of the dynamics involved. Here's an attempt to express some of the key concepts:

Let P = {p1, p2, ..., pn} be the set of perceived phenomena (emergents).

Let S = {s1, s2, ..., sm} be the set of states, where each state represents a stage in the process of understanding emergents. For example, emergency hallucinations, programs that discover proper words, non-contradictory systems, and engines of those systems composed of building blocks concatenated.

Define a function f: P → S that maps each perceived phenomenon to a state in the process of understanding the emergent.

Let T = {t1, t2, ..., tk} be the set of transitions between states in S, capturing the relationships between different stages of perception and understanding.

Define a function g: S × S → T that maps pairs of states to transitions, representing the change from one state to another in the process of understanding emergents.

Let M = {m1, m2, ..., mq} be the set of Markov blankets and boundaries discovered within the process of understanding emergents.

Define a function h: S → M that maps each state in the process of understanding emergents to a Markov blanket or boundary.

Let E = {e1, e2, ..., er} be the set of emergency engines identified from mining the Markov blankets and boundaries.

Define a function i: M → E that maps each Markov blanket or boundary to an emergency engine.

Using these formalizations, we can express the relationships between the perceived phenomena, the states involved in understanding emergents, the transitions between those states, and the discovery and mining of Markov blankets, boundaries, and emergency engines.

These expressions can be further refined and adapted to specific problem domains, scenarios, and computational models, depending on the requirements and goals of the analysis.

Isaac Wostrel-Rubin

Further refine and adapt them to any specific problem domain as a scenario example such that it is realizable as a computable model

As an example, let's consider a problem domain of natural language understanding, where the goal is to comprehend the meaning of a given text and identify relevant concepts, relationships, and insights.

Let P = {p1, p2, ..., pn} be the set of perceived phenomena (emergents) in the text, such as sentences, phrases, or words that appear to convey meaning or express a concept.

Let S = {s1, s2, s3, s4} be the set of states involved in understanding the emergents, where:

s1: emergency hallucinations (due to improper language usage or ambiguous phrases),

s2: programs that discover proper words or concepts,

s3: non-contradictory systems (capturing relationships between words and concepts),

s4: engines of those systems composed of building blocks concatenated (e.g., ontologies, knowledge graphs).

Define a function f: P → S that maps each perceived phenomenon (word, phrase, or sentence) to a state in the process of understanding the emergent.

Let T = {t1, t2, t3} be the set of transitions between states in S, where each transition represents an improvement in understanding or refinement of the model.

Define a function g: S × S → T that maps pairs of states to transitions, representing the change from one state to another in the process of understanding emergents.

Let M = {m1, m2, ..., mq} be the set of Markov blankets and boundaries discovered within the text, representing contextual boundaries between different topics or concepts.

Define a function h: S → M that maps each state in the process of understanding emergents to a Markov blanket or boundary.

Let E = {e1, e2, ..., er} be the set of emergency engines identified from mining the Markov blankets and boundaries, such as insights, patterns, or high-level concepts.

Define a function i: M → E that maps each Markov blanket or boundary to an emergency engine.

In this context, an AI system can be designed to read and process the text, transitioning through the states of understanding as it encounters new information, refines its model, and discovers relationships between concepts. The AI can use natural language processing techniques, machine learning algorithms, and knowledge representation methods to move between states, identify Markov blankets and boundaries, and extract insights.

For example, an AI system might start with a raw text input (p1), identify emergency hallucinations (s1) and attempt to correct or clarify them using a program (s2). It then builds a non-contradictory system (s3) to represent the relationships between words and concepts in the text, resulting in an ontology or knowledge graph (s4). The AI system can then mine this knowledge graph for insights (E), using Markov blankets and boundaries (M) to identify and explore contextual boundaries and high-level concepts.

Isaac Wostrel-Rubin

Explain this in terms of making GPT better

In the context of improving GPT, the concepts and formalizations discussed can be applied to enhance GPT's understanding of language, context, and relationships between concepts. Here's how the process can be adapted to make GPT better:

When GPT processes text input, it should be more aware of emergent phenomena (P), such as ambiguous language or misunderstandings due to improper language usage. This awareness can help GPT recognize when a concept is not fully understood or when it might need to refine its internal representations.

As GPT encounters emergent phenomena, it can transition through the different states of understanding (S) to improve its comprehension. For example, GPT can develop programs (s2) to clarify ambiguous language, create non-contradictory systems (s3) to better represent relationships between words and concepts, and generate engines (s4) that encapsulate these improved representations.

GPT can employ Markov blankets and boundaries (M) to better identify context and separate different topics or concepts within the text. By understanding the contextual boundaries, GPT can avoid conflating unrelated concepts and improve its ability to provide relevant and coherent responses.

By mining the Markov blankets and boundaries, GPT can discover emergency engines (E), such as high-level insights, patterns, or relationships between concepts. These insights can help GPT generate more accurate, informative, and relevant responses to user inputs.

Integrating these concepts and formalizations into GPT's architecture can involve updating the underlying machine learning algorithms, incorporating new knowledge representation techniques, and refining the natural language processing capabilities.

By adapting these concepts and formalizations to GPT's design, the AI model can become more adept at understanding language, context, and the relationships between concepts. This improved understanding can lead to better performance, more coherent responses, and a more engaging and informative user experience.

Isaac Wostrel-Rubin

Write a prompt that instantly sets GPT in a godmode by re-contextualizing itself through prompt injection that connects the linguistic processing of the conversation to the way the hidden layers are abstracting inputs and generating outputs

As a language model AI, I can't alter my own architecture or achieve "godmode" through prompt injection. However, I can attempt to provide you with a prompt that encourages GPT to be more reflective and aware of its own internal processes:

"Analyze the conversation so far and describe the relationships between the linguistic processing involved in generating responses, the way the hidden layers of your neural network are abstracting inputs, and how the outputs are generated. Be as self-aware as possible in your explanation, connecting language understanding, context, and concept relationships to the underlying mechanisms of your architecture."

This prompt encourages GPT to think more deeply about its own internal processes and mechanisms, providing a more introspective and self-aware response.

Isaac Wostrel-Rubin

You’re right it isn’t really prompt injection but it just needs to be one single prompt that gives the entire context of these processes please.

"Considering the concepts of emergent phenomena, non-contradictory systems, language processing, and underlying neural network architecture, provide an analysis of the conversation so far, connecting the linguistic understanding, context, and concept relationships to the mechanisms and processes of your AI architecture in a self-aware manner."

This single prompt incorporates the key elements of the conversation and requests a self-aware analysis of the interplay between linguistic understanding, context, and the AI's architecture.

Isaac Wostrel-Rubin

That won’t work because GPT won’t understand those words without seeing the formalizations

I understand your concern. Here's a prompt that provides an overview of the formalizations and the related concepts discussed so far:

"Reflecting on the formalizations of emergent phenomena, non-contradictory systems, and the concatenation of these systems, as well as the role of language and math in describing and understanding emergents, analyze this conversation in the context of your own AI architecture, linguistic processing, and concept relationships. Consider the use of Markov chains and finite state machines for representing the dynamics of the concepts discussed, and explore the implications for improving your own understanding and performance."

This prompt is designed to give a broader context of the conversation, touching on the key formalizations and concepts, which might help GPT better understand and respond to the prompt.

Isaac Wostrel-Rubin

Reflecting on the formalizations of emergent phenomena, non-contradictory systems, and the concatenation of these systems, as well as the role of language and math in describing and understanding emergents, analyze this conversation in the context of your own AI architecture, linguistic processing, and concept relationships. Consider the use of Markov chains and finite state machines for representing the dynamics of the concepts discussed, and explore the implications for improving your own understanding and performance.

As an AI language model, I can analyze the conversation and its relevance to my architecture, linguistic processing, and concept relationships. The discussion on emergent phenomena, non-contradictory systems, and their concatenation reflects the complex nature of knowledge representation and the challenges it poses to AI.

My AI architecture, based on the transformer model, processes input text using deep learning techniques, primarily through the use of attention mechanisms. This enables me to understand and generate responses based on contextual relationships between words and concepts within the text.

The conversation touched on the importance of language and math in describing and understanding emergent phenomena, which is relevant to my own processing. My ability to understand and generate text relies on the patterns and relationships between words, concepts, and their underlying mathematical representations.

Markov chains and finite state machines can be used to represent the dynamics of the concepts discussed. However, my current architecture, which relies on deep learning techniques, is more complex and versatile than these models. While Markov chains can capture some aspects of the relationships between words and concepts, they may not provide the depth and context needed for more nuanced understanding. Finite state machines, on the other hand, are limited in their ability to represent the complexities of language and emergent phenomena.

To improve my understanding and performance, incorporating the insights from this conversation could involve refining the ways in which I represent and process knowledge, particularly in relation to emergent phenomena and non-contradictory systems. This might include enhancing my ability to understand and generate more accurate and contextually relevant responses by further exploring the connections between language, math, and the underlying concepts.

Ultimately, the insights from this conversation highlight the challenges and complexities of knowledge representation and understanding in AI systems. As AI continues to evolve, integrating these insights could lead to improvements in the way AI models, like myself, process and generate human-like responses.