Grasping a proposition

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Abstract: Teachers strive to help students *grasp* significant propositions beyond merely knowing their content. The phenomenal theory holds that grasping a proposition requires corresponding phenomenal experiences, such as visualizing or perceiving its referents. We argue against this theory and propose an alternative: One grasps that p if and only if one mentally processes p in a way that enables relevant counterfactual reasoning about it. This account not only explains intuitive cases of grasping without phenomenal experiences but also clarifies the precise epistemic role of such experiences. Finally, we demonstrate the practical value of our account by showing how it can be applied to assess students' grasp of philosophical propositions.

Keywords: understanding, grasping, counterfactual account, phenomenal theory, recognition account

One of the epistemic goals of education is to help students understand significant propositions, such as <$E=mc^2$>, <Humans evolved from apelike ancestors over a period of six million years>, and <All human beings are born free and equal in dignity and rights>. On a popular view, understanding a proposition, unlike merely knowing what it says, involves grasping it.[1] What does it take to grasp a proposition?

This question is also significant in recent debates on the nature of understanding-why. Many philosophers (Kvanvig 2003; Strevens 2013; Hills 2016; Khalifa 2017) hold that understanding why p requires *grasping* a correct explanation of p (cf. Grimm 2010). An explanation is a set of propositions with a certain structure. Some (e.g., Bourget 2017; Strevens 2024) further suggest

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[1] Some philosophers (e.g., Strevens 2013; Bourget 2017; McSweeney 2024) equate understanding a proposition with grasping it.

that grasping an explanation requires grasping each proposition that constitutes the explanation. Along this approach, clarifying the nature of grasping a proposition is essential for elucidating the nature of understanding-why.

Here is an initially plausible theory: One grasps a proposition iff one is able to make relevant semantic/qualitative inferences with the proposition (cf. de Regt 2017; Newman 2017; Belkoniene 2023). This type of inference is distinct from purely quantitative/formal reasoning. Imagine a person who is able to deduce $<a = GM/r^2>$ from $<F = GmM/r^2>$ and $<F=ma>$. Also, she is quick to solve quantitative questions like "If G= 6.674×10^{-11}, M=5.9722×10^{24}, r=6,378,000, then a=?" Still, she might have little idea of what *F*, *G*, *a*, or *m* means in Newtonian mechanics. This shows that purely quantitative/formal reasoning does not guarantee a grasp of the relevant proposition. Instead, the ability to make qualitative/semantic inferences is crucial for truly grasping a proposition. We can call this the *inferential theory*. On this theory, if you can correctly apply the proposition $<F=ma>$ to make a prediction (i.e., semantically/qualitatively inferring an observation statement from the conjunction of Newton's second law and certain initial conditions), then you have some grasp of $<F=ma>$. If you can correctly infer $<F=ma>$ from a sophisticated theory (and your reasoning is not merely formal), then you also have some grasp of $<F=ma>$. Stronger qualitative/semantic inferential ability means a better grasp of the proposition.[2] The inferential theory can explain why having a *solid* grasp of a proposition is different from merely knowing what the proposition says. For a student might know what $<F=ma>$ says without being highly able to make relevant qualitative/semantic inferences with $<F=ma>$.

Some philosophers (e.g., Bourget 2017; McSweeney 2024) disagree, however. According to them, to grasp a proposition, one must have some corresponding phenomenal experiences. Thus, to grasp the proposition <Ripe tomatoes are red>, you need to have the phenomenal experience of seeing red. This could be achieved through direct perception (i.e., seeing a red tomato) or mental imagery (i.e., vividly imagining a red tomato). If a person was born with protanopia and thereby cannot see or imagine red, then she cannot grasp <Ripe tomatoes are red>, even though

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[2] De Regt (2017) is concerned with deep understanding, which requires a high degree of qualitative/semantic inferential ability. On his view, a low degree of qualitative/semantic inferential ability along with a high degree of quantitative/formal reasoning ability is not sufficient for understanding a scientific theory.

she is skilled at making the relevant inferences. Call this view the *phenomenal theory*.[3] It implies that a proposition is ungraspable if no one can have any corresponding phenomenal experience. This echoes the influential idea that visualizability is crucial for grasping a scientific theory: The quantum theory is unintelligible or ungraspable because it is impossible to visualize a quantum system.

This paper critically examines the phenomenal theory. We will proceed as follows. First, we will elucidate the phenomenal theory and its appeal. Next, we will raise some objections to the phenomenal theory and propose an alternative account, which aligns with the inferential theory yet preserves the insights of the phenomenal theory. Then, we will defend our account against a possible objection from Strevens' (2024) recognition account. Finally, we will briefly show our account can be used to test students' grasp of philosophical propositions.

1. The phenomenal theory

The phenomenal theory is appealing because it can provide a unified explanation of various cases. To illustrate, consider the following three cases:

> **Jackson's Mary:** Mary is a brilliant scientist specializing in the neurophysiology of vision. She is confined to a black-and-white room and has only ever experienced the world through a black-and-white television monitor. Despite her limitations, Mary has learned all the physical facts there are to know about color and how it is perceived. She knows the wavelengths of light that correspond to different colors, how the cones in the human eye respond to these wavelengths, and how the brain processes these signals to create the experience of color. This knowledge allows her to answer a wide range of sophisticated questions about color perception, even though she has never experienced color herself. Yet when Mary finally leaves the room and sees a red tomato for the first time, there is a change in Mary's cognition: She now has the subjective experience of seeing red, or what it is like to have the qualia of redness. (Jackson 1982)

> **Large Magnitudes:** From the proposition <The volume of the Sun is 1.412×10^{18} km^3, while the volume of the Earth is 1.083×10^{12} km^3>, I can draw numerous inferences. Deductively,

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[3] Bourget (2017) further suggests that having a phenomenal experience with p as its content is also sufficient for grasping that p, but some phenomenal theorists (e.g., McSweeney 2024) disagree.

I can infer that the volume of the Sun is greater than that of the Earth, that the Sun's radius exceeds 100,000 km, and so on. I can also draw non-deductive inferences: for example, that the Sun is larger than the White House, that I could not move the Earth, and that the Earth will not become as big as the Sun tomorrow. The list of such inferences I am able to make could be multiplied *ad nauseam*, and I can act in accordance with this reasoning. Yet, intuitively, there is a sense I do not grasp <The volume of the Sun is 1.412×10^{18} km³, while the volume of the Earth is 1.083×10^{12} km³>. However, if I am presented with an easily visualizable model such as the apple seed and the basketball, it would help me better grasp the relative sizes of the Earth and the Sun. (cf. Bourget 2017)

Video of Violence: Through reading reliable research articles, Alex knows the facts about police violence and racism in America. She also learns, via a friend's testimony, every detail of the tragic story about George Floyd. She feels sorry for Floyd and his family. However, she does not participate in any protest movement fighting against police violence and racism until she watches the video of how George Floyd was murdered. Watching the video does not seem to give Alex any new information, but it creates an emotional and motivational shift in her. (cf. McSweeney 2024)

The phenomenal theory can easily make sense of each case. First, Jackson's Mary knows without grasping <Ripe tomatoes are red> before leaving the room because she lacks any corresponding phenomenal experience. After leaving the room, Mary sees red. She does not acquire any new information. Instead, she processes the old information in an epistemically better way: She now grasps <Ripe tomatoes are red>. This analysis is compatible with physicalism, as Bourget (2017: 289) notes, "Physicalists are committed to denying that Mary learned anything upon experiencing red for the first time, but they generally agree that Mary was missing something. What Mary was missing is usually characterized as a 'way of knowing.'" This widely endorsed "old fact, new way" reply is boosted by the phenomenal theory.

Second, the phenomenal theory readily accommodates the Large Magnitudes case. It implies that we cannot directly grasp propositions involving vast scales because we lack the corresponding phenomenal experience. Instead, we can only grasp such propositions indirectly, for instance, through an observable model. This explains why the proposition <The volume of

the Sun is 1.412 x 10^{18} km^3, while the volume of the Earth is 1.083 x 10^{12} km^3**>** is better grasped by observing a model of a basketball and an apple seed.

Finally, with regard to the Video of Violence case, the phenomenal theorist would say what explains Alex's emotional and motivational shift is her epistemic shift from mere knowing to grasping. Watching the video gives her the phenomenal experience corresponding to her beliefs and thus enables her to grasp what she already believes. As McSweeney (2024: 264) writes, "such people … became much closer to … [grasping] these propositions that they already believed. And this happened … in virtue of them coming to identify the objects of their visceral phenomenal experience with the objects of some propositional beliefs that they previously genuinely held, but did not grasp."

2. Grasping without phenomenal experiences

While the phenomenal theory offers a tidy explanation for several puzzling cases, it is fundamentally flawed, as we will argue in this section. We will first expose the theory's implausible implications, including a radical skepticism about our ability to grasp much of the world, from complex science to abstract mathematics. Then, we will advance an alternative account of grasping, which not only avoids such radical skepticism but also explains the epistemic shifts in the cases of Jackson's Mary, Large Magnitudes, and the Video of Violence.

To see that the phenomenal theory leads to counterintuitive consequences, consider the following case:

> **Mary's Child:** Mary has a child who is confined to the same black-and-white room and has only ever experienced the world through a black-and-white television monitor. He accepts Mary's testimony that ripe tomatoes are red. Yet, unlike Mary, the child has no scientific knowledge about colors. Mary's scientific knowledge enables her to answer a wide range of what-if-things-had-been-different questions about color perception, such as "If a ripe tomato lacked lycopene, would it appear red to the person who can see red? If a green light were shone on a red ripe tomato, would the tomato appear black?" Yet Mary's child can answer none of such questions.

Intuitively, Mary has a better grasp of <Ripe tomatoes are red> than her child, though neither has phenomenal experiences of seeing red. If our intuition is correct, then grasping that p (to a certain degree) does not require having a phenomenal experience with p as its content, and the phenomenal theory is false.

However, the phenomenal theorist would insist that our intuition is based on confusion: We confuse *grasping a proposition* with *being able to mentally manipulate the proposition*. The very concept of grasping is supposed to pick out a unique epistemic status that distinguishes Mary's state upon seeing red from her state before leaving the black-and-white room. When we theorize about grasping, we should look at paradigm cases of the transition from not grasping to grasping. Jackson's Mary, Large Magnitudes, and Video of Violence are such paradigm cases. They show that grasping a proposition requires having the corresponding phenomenal experience. In the case of Mary's Child, while Mary is far more skilled at manipulating related scientific propositions, she does not have a better grasp of <Ripe tomatoes are red> than her child, for she does not have any corresponding phenomenal experiences.

At this point, some might think that the disagreement between phenomenal theorists and us is merely verbal, for the two parties use "grasping" in different ways. Specifically, phenomenal theorists use "grasping" to denote a unique epistemic status that distinguishes Mary's state upon seeing red from her state before leaving the black-and-white room. In contrast, we use "grasping" to capture the epistemic difference between Mary and her child in the black-and-white room. Thus, some might suggest that there are two kinds of grasping. The phenomenal theory is a correct account of one of them.

We disagree with this assessment, however. We contend that the disagreement is indeed substantive and that the phenomenal theory is false. To see this, note that having a phenomenal experience with p as its content does not necessarily enhance one's grasp of p. Consider the following case:

> **Mismatch:** After Mary leaves the black-and-white room, she sees both red and green tomatoes for the first time. Intellectually, she knows that ripe tomatoes are red and that unripe tomatoes are green. Yet, when she is looking at a red tomato, she thinks that it is green. When she is looking at a green tomato, she thinks that it is red. She is not color blind. She just fails to match her phenomenal experience with her propositional thought.

She is like a person who intellectually knows that apples are different from pears, but when looking at a pear, they would believe that it is an apple.

Intuitively, Mary's grasp of <ripe tomatoes are red> is *not* enhanced through merely having a phenomenal experience of red ripe tomatoes. To accommodate this kind of case, McSweeney (2024) proposes that grasping a proposition involves Husserlian fulfillment: We grasp a proposition by successfully *matching* or *aligning* the objects of our intuitive experiences (like perceptions, imaginations, or hallucinations) with the objects of our abstract, propositional thoughts. On this view, Mary's grasp of <Ripe tomatoes are red> is enhanced if two conditions are met: first, she has the phenomenal experience of seeing a ripe, red tomato, and second, she correctly believes that what she is looking at is indeed a ripe, red tomato.[4]

Still, it seems that Husserlian fulfillment (i.e., matching a phenomenal experience with a proposition) is not, by itself, sufficient for enhancing one's grasp of a proposition. Suppose Mary correctly believes that the thing she is looking at is a red ripe tomato, not because she recognizes it on her own, but because her companion tells her so. Without her companion's help, Mary would be unable to match her phenomenal experience with her propositional thought. In such a case, the fulfillment is merely due to testimony. Intuitively, it does not enhance her grasp of <Ripe tomatoes are red> (cf. Strevens 2024). In addition, Husserlian fulfillment can occur by pure luck. Suppose Mary correctly believes that the thing she is looking at is a red ripe tomato, not because her companion tells her so or she recognizes it on her own, but because she makes a lucky guess. She is like a person who knows apples and pears are different but, when looking at a pear, happens to correctly guess it's a pear without any real ability to distinguish it from an apple. This lucky success does not seem to enhance her grasp of the proposition <Ripe tomatoes are red>.

To address such problems, McSweeney might argue that grasping a proposition requires the ability to achieve Husserlian fulfillment *on one's own in a reliable way*. However, this ability seems to reduce to the ability to reason counterfactually about one's phenomenal experience. To see this, consider Mary after she leaves the black-and-white room and encounters a red ripe tomato for the first time. When she correctly identifies this experience as matching <ripe tomatoes are red>,

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[4] McSweeney argues that grasping comes in degrees—partial to full—because it depends on the extent and variety of fulfillment acts. Each act of fulfillment contributes to grasping a proposition, but rarely exhausts it. Full grasp, if achievable, would require fulfilling a proposition in every possible way it could be experienced, which is typically unattainable for most propositions.

her success isn't just a one-off event. It reflects a broader ability to navigate hypothetical scenarios. For example,

- If someone asked, "Does <Some apples are green> correspond to your current experience of seeing a red tomato?" Mary would confidently respond, "No."
- If Mary instead saw a green apple, she wouldn't mistakenly link that experience to <ripe tomatoes are red>.
- If she saw a different red tomato—say, a larger one in a different setting—she'd still correctly align it with <ripe tomatoes are red>.

In this case, Mary is able to reason counterfactually about one's phenomenal experience, which means that she reliably achieves Husserlian fulfillment on her own.

If the most plausible form of the phenomenal theory states that one grasps a proposition by reliably and independently achieving Husserlian fulfillment, then this theory can also be seen as a special form of the inferential theory, as the ability to reason counterfactually is a kind of inference ability, broadly construed. So, let us call it the *phenomenal-inferential theory*.

However, the phenomenal-inferential theory leads to skepticism about grasping. It implies that we cannot grasp a lot of things: Due to lacking corresponding phenomenal experiences, we cannot grasp any propositions that involve large or small magnitudes (e.g., 555^5, 686^{-8}, etc.), nor can we grasp most interesting math propositions (e.g., Fermat's Last Theorem, Gödel's Incompleteness Theorems, the Prime Number Theorem, Cantor's Theorem, etc.). Also, according to the phenomenal-inferential theory, even if a scientist is highly skilled at using a sophisticated theory (e.g., Quantum Mechanics, General Relativity, String Theory, etc.), she does not have a good grasp of such a theory as long as she lacks any corresponding phenomenal experiences. This skepticism sounds implausible (cf. de Regt 2014; Grimm 2016). It is more plausible to say that people like Max Planck and Werner Heisenberg have a good grasp of Quantum Mechanics even if they cannot visualize Quantum Mechanics.

Some might respond that skepticism about grasping propositions in mathematics and physics is justified. They could point to prominent figures who expressed such doubts. For instance, John von Neumann once told a young mathematician, "In mathematics, you don't understand things.

You just get used to them."[5] Similarly, Richard Feynman famously stated, "I think I can safely say that nobody understands quantum mechanics."[6] These quotes might seem to support the view that grasping complex propositions in these fields is unattainable.

However, we contend that von Neumann and Feynman are not advocating skepticism about grasping propositions in their fields. A crucial distinction must be made between grasping a proposition p and grasping that p is true or how p could possibly be true. To be sure, grasping that p is true or how p could possibly be true entails grasping p. But the entailment does not hold in reverse: One can grasp a false proposition without believing it to be true. Likewise, one might grasp a contradiction and recognize that it cannot be true. Feynman's remark likely conveys that even those who genuinely grasp quantum mechanics as a theory struggle to grasp that it is true or how it could possibly be true. This aligns with Niels Bohr's observation: "Anyone who is not shocked by quantum mechanics has not understood it."[7] The shock arises from the conflict between grasping the theory's claims and reconciling them with reality, not from a failure to grasp the claims themselves. Similarly, von Neumann's comment implies not a failure to grasp mathematical propositions, but a difficulty in grasping that some mathematical propositions are true or how they could possibly be true.

To avoid skepticism, we propose that one grasps that p iff one mentally processes p in a way that enables one to perform relevant counterfactual reasoning. This view aligns with the inferential theory, but it shifts the emphasis to reasoning about hypothetical scenarios. Call it the *counterfactual account*.[8] A few clarifications are in order. First, some philosophers (e.g., Newman 2017; Strevens 2024) hold that grasping a proposition *is* an inferential ability, not a state that explains that ability. In contrast, we believe that grasping a proposition explains the ability to reason counterfactually; this ability, therefore, manifests the grasp.[9] However, a defense of this view is beyond the scope of this paper, as our central arguments are compatible with either view.

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[5] Cited in Zukav (1979: 208).

[6] Cited in Baaquie (2013: 24).

[7] Ibid.

[8] It is inspired by an influential account of grasping dependence relations in causal understanding, cf. Grimm (2010; 2014) and Hills (2016).

[9] Grimm (2014) holds a similar view though he is mainly concerned with grasping causal relations rather than propositions.

Second, our account appeals to the concept of *relevant* counterfactual reasoning. While a full analysis of what counts as "relevant" is a complex issue—as relevance is likely context-sensitive and comes in degrees—such a theory is not needed to see the advantages of our account. We can rely on clear intuitions. For instance, for any given proposition p, the following types of counterfactual questions are clearly relevant:

- If m were true (suppose that m is false), according to p, how would the true value of n change?
- If q were true (suppose that q is false), would the truth value of p change?
- If r were true (suppose that r is false), would we have good reasons to reject or doubt that p?

An individual who can readily answer such "what-if" questions about p demonstrates a solid grasp of it. In general, a stronger ability to reason counterfactually corresponds to a better grasp of the proposition.

Let us illustrate the counterfactual theory with two examples. First, consider the proposition <a quantum system can exist in multiple states simultaneously>. Imagine a PhD student in theoretical physics who cannot have any phenomenal experiences corresponding to this proposition. Yet she gets an insight into the proposition such that she is able to answer the following what-if questions: If her partner put their cat into a box so that no one can see the cat, *according to the proposition*, could the cat be both alive and dead at the same time?[10] If the universe were perfectly deterministic, with every event being the necessary and predictable result of prior causes, would the truth value of the proposition change? If classical physics fully explained all microscopic phenomena, would we have good reasons to reject the proposition? If experiments such as the double-slit experiment did not show interference patterns, would we have good reasons to doubt the proposition? Since the PhD student can answer these questions independently, the counterfactual account implies that she has a solid grasp of <a quantum system can exist in multiple states simultaneously>.

Second, suppose you are asked to consider <0.999999… = 1>. After careful consideration, you can answer the following counterfactual questions: If you were asked to consider <every number

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[10] If you answer "yes", then you do not grasp the proposition.

can have at most one valid infinite decimal representation>, then according to <0.999999… = 1>, would the proposition about decimal representation be true? If Trump signed an executive order stating that human intuition about numbers always matches mathematical truth, would the truth value of <0.999999… = 1> change? If we had good reasons to think that real numbers have "gaps", would we have good reasons to doubt <0.999999… = 1>? If you were asked not to rely on the algebraic identity <10x - x = 9x> to prove <0.999999… = 1>, would it be possible to deduce <0.999999… = 1> from some other mathematical propositions that are intuitively true? Since you can answer these questions independently, the counterfactual account implies that you have a solid grasp of <0.999999...=1>. Your grasp lies in your ability to perform relevant counterfactual reasoning. No corresponding phenomenal experiences are required.

A related point: Competently proving a theorem from a set of axioms does *not*, by itself, entail a solid grasp of that theorem, particularly if one fails to grasp the axioms. According to the counterfactual account, grasping an axiom/theorem involves the ability to navigate relevant hypothetical scenarios related to it. This aligns with the perspective of the Fields Medal winner William Paul Thurston, who famously said, "Mathematics is not about numbers, equations, computations, or algorithms: It is about understanding."[11]

The counterfactual account not only avoids skepticism about grasping propositions in physics and mathematics. It also preserves the phenomenal theory's insight that if you do not have any experiences corresponding to p, then there is something missing in your grasp of p. This is because having some phenomenal experiences corresponding to p is necessary for making certain relevant counterfactual reasoning. To illustrate, reconsider the three cases in Section 1:

First, Mary in the black-and-white room can know, via testimony, that a normal person's phenomenal experience of seeing a red tomato is different from the person's phenomenal experience of seeing a green tomato. Yet she is unable to answer a key counterfactual question: If she had the experience of seeing a red tomato, how would this experience be different from her experience of seeing a black-and-white picture of tomato. To be able to make this kind of counterfactual reasoning, Mary must have the phenomenal experience of seeing a red tomato. Thus, the counterfactual account can easily explain both why Mary's grasp of <ripe tomatoes are red> is better than her child's before leaving the room and why Mary's grasp is enhanced after

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[11] Cited in Ravichandran & Razdan (2025: 475).

leaving the room. According to the counterfactual account, Mary's grasp before leaving the room and her grasp after leaving the room only differ in degrees, not in kinds.

In addition, the Large Magnitudes case can be accommodated in a similar way. Suppose that I can make the relevant counterfactual reasoning about the proposition <The volume of the Sun is 1.412×10^{18} km³, while the volume of the Earth is 1.083×10^{12} km³>. E.g., I can answer questions of the following kind: If the Sun had a radius of less than 100,000 km, how would its volume change? If the Sun were one tenth of the volume of 1.412×10^{18} km³, would the Sun still be larger than the earth? Then the counterfactual account implies that I have some grasp of < The volume of the Sun is 1.412×10^{18} km³, while the volume of the Earth is 1.083×10^{12} km³> even though I do not have any corresponding phenomenal experience. To be sure, if I am told that the Earth is to the Sun as an apple seed is to a basketball, and I imagine the Earth as an apple seed next to a basketball, then I have a better grasp of < The volume of the Sun is 1.412×10^{18} km³, while the volume of the Earth is 1.083×10^{12} km³>. This is because the model enables me to answer certain counterfactual questions (e.g., "If I were a cosmic giant, able to gaze upon both the Sun and Earth, what would be my view?") that I could not answer without such a model.

Finally, the counterfactual account can make sense of the Video of Violence case. Alex does not act until she watches the video, because only after watching the video is she able to answer questions such as "If I were a victim of police violence, what would it look like? How would I feel? How would my experience of this violence be different from my experience of being treated unfairly in a competition?".[12] The ability to answer such questions is the ability to put yourself in someone else's shoes, which is a key component of moral decision-making and ethical behavior. The counterfactual account can explain the epistemic role of empathy.

3. Grasping and recognition

Some philosophers might agree that grasping a proposition does not require having any corresponding phenomenal experiences, yet they would reject the counterfactual account. They might raise the following objection:

1. Grasping that p requires grasping the relevant properties.

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[12] Some may know the answer without being able to express it in language.

2. To have some grasp of a property is to be able to independently recognize some instances of that property.

3. Being able to make some relevant counterfactual reasoning is *insufficient* for independently recognizing an instance of a property.

4. Therefore, being able to make some relevant counterfactual reasoning is insufficient for having some grasp of p.

Michael Strevens (2024) seems to endorse Premise 1 and 2. On his view, grasping that p requires grasping the relevant properties, e.g., to grasp a proposition like <ripe tomatoes are red>, you need to grasp the relevant properties such as tomatohood and redness. To grasp a property is to be able to recognize instances of that property *without* relying on external cues or assistance. Suppose I cannot tell that the picture I am looking at is a picture of cell structure unless someone tells me that it is a picture of cell structure. Then my knowledge that this is an instance of being a picture of cell structure relies on external assistance. Strevens claims that if one cannot recognize any instances of a property *without* relying on external cues or assistance, then one has no grasp of the property.

Strevens' recognition account aligns with the counterfactual account in two aspects. First, Strevens' view implies that grasping a proposition without having the corresponding phenomenal experience is possible. Specifically, recognizing an instance of a property does not require having the corresponding phenomenal experience, for Strevens (2024: 751) defines recognition as "simply inference to a conclusion of the form, 'This is one of those,' where 'this' might be something far away in space and time or entirely immaterial, and 'those' might be a set of things that cannot be directly observed even up close." Thus, one may recognize that this tomato is one of the red things without having any phenomenal experiences of seeing red, as Jackson's case of Mary shows. Mary can only experience the world through a black-and-white television monitor. But suppose that she can remotely control a machine that can measure the wavelength of the light a ripe tomato reflects in the world. Then she can recognize that a certain tomato is red based on her scientific knowledge. So, Mary can have a good grasp of <ripe tomatoes are red> in the black-and-white room.

Second, Strevens' account implies that grasping a proposition involves the ability to answer the relevant counterfactual questions. For being able to independently recognize that X is an

instance of a certain property F entails being able to answer the questions of the following kind: If you considered a thing different from X in certain ways, would it be an instance of F? If you cannot answer such questions, then you are unable to independently recognize that X is an instance of a certain property F. Suppose that you are looking at a fox. And you correctly believe that the animal is a fox. But if you were looking at a dog or a deer, you would still believe that it is a fox. Then you may well fail to recognize that the animal you are looking at is a fox.

This brings us to Premise 3 of the objection, for it seems that not all what-if-things-had-been-different questions are relevant to recognizing that X is an instance of F. Imagine a person who is unable to independently recognize any instances of foxhood. Whenever he is looking at a fox, he believes that it is a dog. Whenever he is shown a picture of a fox, he believes that it is a picture of dog. To be sure, he knows, via your testimony, that foxes and dogs are different animals: Foxes typically live 2–4 years, while dogs live 10–13 years. Also, if he is presented with a fox, and you ask him a loaded question like "Is it a fox or a frog?", he would say that it is a fox. But he knows that it is a fox *with your help*. Despite this, he might be able to answer the following questions: If he looked at an animal without a tail, would that animal be a fox? If he were shown a picture of an animal with two horns or a pair of wings, would that animal be a fox? Thus, being able to answer a few what-if-things-had-been-different questions is *insufficient* for independently recognizing an instance of a property.

So far, I have clarified each premise of the objection from recognition. In what follows, I will argue that the conjunction of Premise 1 and 2 is false. The conjunction of Premise 1 and 2 implies that having some grasp of p requires being able to independently recognize some instances of each relevant property. Thus, to have some grasp of <dogs and foxes are different animals>, one must be able to independently recognize some instances of foxhood. However, I will argue that having some grasp of p does not require being able to independently recognize some instances of each relevant property.

To see this, we need to distinguish between the following two claims:

    i.   Grasping the *fact* that p requires recognizing some instances of each relevant property.

    ii.   Grasping the *proposition* that p requires recognizing some instances of each relevant property.

We think (i) is plausible. Grasping the *fact* that p requires not only believing that p is true but also recognizing what makes p true. If one fails to recognize any instances of the relevant properties, one does not recognize what makes p true. Thus, if one fails to recognize any instances of a relevant property, one does not grasp the fact that p.

We disagree with (ii), however.[13] Admittedly, recognizing what makes p true enhances one's grasp of the proposition. Yet, to have some grasp of the *proposition* that p, one does not have to determine whether p is true: Grasping a proposition is compatible with suspending judgment about its truth value. This suggests that one might have some grasp of the proposition without recognizing any instances of a relevant property. Consider the following case:

> **Large Prime Number:** Suppose you know the definition of a prime number: a natural number greater than 1 that is not a product of two smaller natural numbers. You can easily apply this definition to determine whether small numbers like 3, 5, 8, 13, or 15 are prime. From this definition, you can also infer simple rules, such as that any number greater than 9 ending in 0, 2, 4, 5, 6, or 8 cannot be prime (e.g., 39,178 is not prime). However, this ability does not mean you can recognize any instance of *a prime number greater than 10,000*. Take 95,369, for example. You are unable to independently determine whether it is a product of two smaller natural numbers. To be sure, if you were asked a loaded question like "Which is a prime number greater than 10,000: 20,000 or 95,369?", you would correctly answer that it is 95,369. Also, if you asked ChatGPT whether 95,369 is a prime number, you would know the correct answer via its testimony, though you have no conception of how ChatGPT works.[14] In such scenarios, you have to rely on external cues or assistance. You cannot independently recognize any instance of *a prime number greater than 10,000*.

Strevens would say that you merely know the definition of *a prime number greater than 10,000*. You fail to grasp the proposition <95,369 is a prime number greater than 10,000>.

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[13] At some places, Strevens seems to endorses (i) rather than (ii). Yet he also suggests that grasping a concept involves the ability to recognize instances that fall under that concept. If grasping a proposition requires grasping each relevant concept, then grasping a proposition requires recognizing some instances of each relevant property. See Strevens (2024).

[14] Strevens seems to think that *only* those who have some understanding of how ChatGPT works can grasp, through using ChatGPT, that 95,369 is a prime number.

But let us further suppose though you cannot independently recognize any instance of *a prime number greater than 10,000*, you are able to reason counterfactually about <95,369 is a prime number greater than 10,000>. For example, you are able to answer the following questions: If you added 831 to 95,369, would the sum be a prime number greater than 10,000? If your friend Smith believed that <any integer ending in the digit 9 is divisible by 3>, then according to <95,369 is a prime number greater than 10,000>, would his belief be true? If he believed that <95,369 is a product of 95 and 369>, would he have good reasons to reject <95,369 is a prime number greater than 10,000>? If all people took a drug and came to believe that 95,369 is a composite number, would the truth value of <95,369 is a prime number greater than 10,000> change?

Since you are able to answer such counterfactual questions, it is plausible to say that you do more than simply know the definition of *a prime number greater than 10,000*: You have some grasp of <95,369 is a prime number greater than 10,000> even though you are unable to independently determine whether it is true. Yet Strevens' recognition account implies that you have no grasp of the proposition.

4. Conclusion

To wrap up, this paper has argued against the phenomenal theory of propositional grasping, which posits that grasping a proposition requires having corresponding phenomenal experiences. As a more plausible alternative, we have defended a counterfactual account: Grasping a proposition lies in the ability to reason about its surrounding possibilities. This view excels where its rival falters—it readily accommodates intuitive cases of grasping without phenomenal input, while illuminating the epistemic significance of phenomenal experiences by recognizing their potential to enhance grasping through unlocking new avenues of counterfactual reasoning.

Before closing, we would like to briefly show how our account could be used to test students' grasp of philosophical propositions. Take JTB, the proposition <knowledge is justified true belief>. Here are some relevant counterfactual questions: If Anaxagoras believed that the moon shines by reflecting sunlight because he thought that the moon is made of glass, according to JTB, would his belief be knowledge? If our beliefs about the external world were all false, would the truth value of JTB change? If Descartes explicitly endorsed JTB and held that justification is infallible, would his theory save JTB from Gettier's objection? If most people did not share the intuition that the agent in a Gettier case does not know, would that undermine Gettier's objection

to JTB? According to our account, a student who can answer such questions has a solid grasp of JTB.

Declarations
The author declares no conflict of interest, and there are no competing interests to declare that are relevant to the content of this article.

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