

What are the benefits/disadvantages of a "unified account of the world?"

If new theories are replacing old ones all the time, especially in biological science, how can we keep any item as "fact," or can we accept any item as "fact?"

Why is it important, either philosophically or biologically to decide whether two theories are reducible or one is a revision or one replaces the other? If we can bend definitions of either reduction or of genes, alleles, and what have you so that one theory becomes reducible (or hopelessly irreducible) to the other, then why is there so much contention? Whatever you call it, you can break down material processes to more and more fundamental physical laws, which, as they mentioned in chapter 7, can enrich understanding of the large scale process, or simply add extraneous detail.

Is there a reason a gene can't be a multiply realizable piece of biological instruction, something that is defined by function rather than form? In that case, I guess a "gene" is still more of a Mendelian term, but it could still be described as a combination of molecular components and processes, just not as decomposed as we thought.

Molecular genetics seems to me like a mechanistic way of explaining Mendelian genetics. Can molecular genetics be viewed as an extension of Mendelian genetics instead of a reduction?

Are there conditions under which the mechanistic model wouldn't work?
Are there kinds of unification of fields of science that are desirable to people, for which this model would not be satisfactory?

[I] wonder if the[re is a] possibility of our perception of reality could be completely wrong. That is, could we know the laws of something, say gravity, but not truly appreciate or know gravity itself? Yes we can fly planes (most the time) which means that we have an understanding of certain laws but what if flying is such a small aspect of gravity?

the book states that there are very rare cases where classic genetics reduce to molecular genetics, and even if so, macroscopic explanations remain independent of reducing explanation. Is there an example where the macroscopic explanation is independent?

the Churchlands wanted to remove "folk psychology." If I understood correctly, you explained how they believed wants, desires, and belief don't really exist, and a new framework must be established to understand these phenomenon. The concept was intriguing and I wasn't sure if I understood it all. Is that to say that we shouldn't simply accept them as something above physiological explanation/understanding?

In SG chapter 7, Kitcher, in his antireductionist stance concerning molecular biology and genetics, thinks that the "'gory details' of molecular mechanisms are irrelevant to the explanatory power of Mendelian principles". He equates this to the story of why a round peg won't fit into a square hole as being "fully explained" without resorting to the physical makeup of the pegs as being necessary for a sufficient explanation. Is he taking for granted the fact that we might understand that it doesn't fit, but if we knew the physical makeup of the object we might understand it in a better way? i.e. a more ontologically accurate way, even though this might not help us in our every day lingo in explaining things or events.