What is a module? Opponents of the claim that there are modules often suppose that we can explain what it is for something to be a module by giving a list of features. They take theoretical committment to modularity to be merely committment to the existence of a systems which exhibit informational encapsulation, domain specificity, limited access, and the rest.

But Sam has argued that these features are merely superficial characteristics of modules.

slide-4 On his view, the fact that a system is a module explains why it exhibits these features. So of course being a module cannot simply consist in bearing these features.

To repeat, modularity is something that explains these properties rather than something that merely consists in them.

Going further, Sam suggests that being modular is a matter of your processes being rule-govered computational processes of a certain type, and of the representations you operate on having a distinctive representational format.

It is these facts about the distinctively modular processes and representations that explain why modules evidence features like information encapsulation or domain specificity.

It follows that what matters in determining whether something is module is not the absolute degree of encapsulation (say), but rather whether differences in degree of encapsulation (say) indicate differences in the nature of the underlying processes and representational formats.

A threat that Sam is aware of: opponents of modularity will retort that Sam has raised the bar for objections so high that nothing could show there are no modules!

[As Sam writes in the paper, 'Concerning how Fodorians should understand the natural kindness of modular input systems, my suggestion is just that modular systems might be distinguished in the human mind by an underlying type of computational process that governs their operations: i.e. that the essence of the modular kind might be a certain type of computational processing that is found in some, and only some, cognitive systems—the modular ones—and that entails and explains the manifestation of the superficial properties that these systems are seen to display to a striking degree.']

slide-5 Sam's retort (in the paper) is to emphasise that his view makes some predictions ...

'predictions ... whenever we find a module we will find that the content it processes is like that processed by other modules ... and unlike that processed by non-modules' with respect to its representational format.

slide-6 In what follows I want to focus on this notion of representational format.

slide-7 It's a familiar idea that things—sounds, say—can be specified using different representational formats.

Differences in format matter because they affect performance: some things that are difficult or impossible in one format (changing pitch, say) can be possible and perhaps even easy in another representational format.

slide-8 I take it that nonmodular processes involve representations with different formats. In producing music, say, we might use artifactual representations with varying representational formats. And it seems reasonable to suppose that the mental representations involved might similarly have a variety of different representational formats.

Or think about finding your way here to MindGrad, which could involve combining use of written instructions with a paper map. Again, it seems reasonable to think that performing this task may also involve mental representations with various formats.

[This is the beginnings of an objection to something Sam writes: 'critics of such a view seem required to hold the opposite: they must hold that the form and structure of the representations will remain constant across these systems, at least from the point of view of the systems doing the computing.']

slide-9 How are things with modules? Is there a single format common to all the representations in modules, or can representational format differ from one module to the next?

Sam's view is most straightforwardly interpreted as denying this possibility. The claim is that modularity has an essence, and that essence is specified in part by a representational format that distinguishes modular from nonmodular processes. It would be simplest to develop this view on the assumption that there is one kind of rule-goverened computational process and one kind of representational format common to all modules.

Sam himself appears to accept this view: 'the essence of the modular kind might be a certain type of computational processing that is found in … only … the modular … and that entails and explains the manifestation of the superficial properties that these systems are seen to display to a striking degree.'

slide-10 But it seems quite plausible that different modules will involve different representational formats. Consider the modules that Sam mentions: vision, speech and navigation.

Vision presumably deals with the arrangement of surfaces and objects in

space, whereas navigation is about landmarks and routes; and speech concerns acoustic and bodily events.

It is tempting to suppose that dealing with these things efficiently may require representations with different formats, and so that the representations in three modules will differ in format.

Suppose this is right, that the underlying processes differ significantly in kind.

Recall that it is the nature of their processes and representational formats which explain why modules evince features such as information encapsulation. This may well mean that these three modules—speech perception, vision and navigation—evince charcateristics associated with modularity such as encapsulation and limited accessibilities to varying degrees.

What follows from this possibility?

[Sam also writes that 'critics must convincingly show that different modules manifest their distinctive properties in quite different ways such that these differences must be explained by the underlying properties or mechanisms of the systems themselves']

slide-12 An immediate consequence, given Sam's view, is that there would be no one such thing as modularity. After all, the unity of the modules depends on their having a single essence. But if the essence of modularity is specified by the nature of the processes and the format of the representations, then the idea that different putatively modular systems involve different kinds of process and format seems to imply that they lack a single essence.

This might seem like an objection to Sam's view, but I'm not sure it is. I have the sense that I am merely taking the view that Sam has presented and going one step further.

After all, once we have the distinction between format and kind of process as a theoretical tool, why do we need there to be a single essence which all modules share?

But I'm not sure. Maybe this is a step too far. Let's see what Sam says. Here are my three questions for him.

References