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Bransford and johnson 1972 evaluation

Goals – To demonstrate that contextual information is a prerequisite for learning. Method – Participants listen to the title and then confusing speech participants listen to the misleading speech and then afterwards the result of the tile With the title before, remembered 5.8 ideas Without titles remembered, 2.8 ideas and with the title afterwards remembered 2.6 ideas I was busy as hell, so I didn't have much time or energy to post anything But I had an idea today that I thought I'd try. There are a bunch of experiments that I love for a variety of reasons, and because I really like them and have described them so many times, I can write ten pages about them in my sleep (and given the fact that I'm so tired, I might do it at the end of this post). So I'm going to try to send one of these every now and then until things slow down a little here over the break. I'll try to give it a bit of context and explain why I like the study so much. And because of some of the experiments I like to relate to, perhaps a coherent picture will appear at some point. I'll start with Bransford and Johnson (1972, 1). OK, so for a really long time -- like two millennials -- memories have been

sided as copies, or in more recent parlances, trail the experiences they represent. You can find something like this view on Aristotle, and especially in British Empirics. Here's a pretty representative quote, from Hume's A Treatise on Human Nature (2): We find it with experience, that when any impression is there with the mind, it again makes its appearance there as an idea; and this can be done after two different ways: either when in new appearance it maintains its first level of humidity, and rather mid-betwixt effects and ideas: or when it completely loses that softness, and is a perfect idea. The faculty, when we repeat our impressions initially, is called MEMORY, and other IMAGINATIONS. 'The tissue is evident at first glance, that memory ideas are more lively and stronger than the imagination, and that the former faculty paints its objects in more different colors, than any used'd by the latter. When we remember any past events, the idea flowed over the mind in an orderly manner; while in the imagination the perception is faint and languid, and cannot be without difficulty being preserved'd by the imposition of the mind and uniform for quite a long time. Here, when our experience representation retains all the good stuff experience, what we will today call episodic information, and Hume calls color and virginity, it is memory. When it loses this stuff, it becomes a perfect idea, or what we might be today refers to as a concept, which is the nature of the imagination, and completely memory. Memories, then, are just copies of the experience, and the perfect ideas are something completely different (different species, says Hume in the next sentence). This memory view is still dominant enough when empirical psychology was born in the 19th century. Ebbinghaus, for example, with all his nonsense words, holds such views. For him, memory is a decaying footprint (forget), or coordinated, blocked, or overwritten (interference). Behavior is even worse. They do pretty much in doing so with the concept of memory altogether, although they still hold some sort of concept of association that looks like a memory trail. Then came the cognitive revolution in the middle of the last century, and a group of young whippersnappers were eager to change everything, so they attached to an idea that has simmered under a layer of behaviour and empirical psychology for what seems like forever. The idea, which you can track to the likes of Wundt and Titchener (and my buddy William James), and the one described most obviously (but subsequently ignored, at least in the United States) by F.C. Bartlett, is that Hume's memory and imagination, or concept, are not really separate. Under this view, memory is not about copies or traces, but conceptual representations, sometimes referred to as schematics (although no one knows what the hell's schematic). Retrieving memory is no longer the process of choosing an entire copy of the experience from several storage bins in memory, but rebuilding the experience using the schema as a guide. This view triggered a ton, and I mean a ton of research in the 1950s, 60s, and 70s, many of which centered around a number of key principles: selection, abstract, integration, and interpretation. Basically, this view gives rise to that when we encode new experiences into memory, we first activate the schema, which chooses the aspect of the experience we coding with. This schema is an abstract, since it is used to encryption a bunch of relevant experiences that may have different specific properties but the same overall structure. So when the schema selects information to encryption, they get rid of the specific details of the new experience. Therefore, new experiences are integrated into the schematics, and details of new and relevant structures with the schema can be added to it, allowing the schema to handle a wider range of experiences. Finally, the experience is interpreted through the schematics, so that information in the schema but not immediately clear in the experience can be concluded. It might help give you an example. Let's say you walk to McDonald's. You automatically activate Your McDonald's, which tells you things like how you order (over the counter), that you have to take your own food 'cause nobody will take it to that they give you a cup and you get your own drink from the soda fountain (do they still call them soda fountains?), etc. If you are then asked to remember your trip to McDonald's, you'll probably remember all these things, and forget all the side details of the tour. That's selection and abstract. If you go in and find that they no longer give you a cup so you can pour your own drinks, but instead fill your cup for you, you'll probably stick that into your reach (especially if it happens on a few visits). That's integration. If instead you walk into the counter, order your food, and then receive your food without getting a cup, you'll ask for one,' cause you knew you were supposed to get a cup so you could get your own drink. That's an interpretation. It's pretty simple, right? It's simple, but it's a very powerful theory, and it can have some profound implications -- false memories, for example. As I said before, there was a ton of research done in the first twenty years after cognitive revolutionary testing, or at least point out, a different consequence of this view. I can write a blog only on that literature, and I'll have material worth a few years. But I'm just going to give you a set of reviews today, described by Bransford and Johnson in the 1972 paper, and mainly designed to demonstrate the principle of selection, because it's one of my favorites. In their first study, Bransford and Johnson gave their participants this paragraph: If the balloon appeared, the sound wouldn't be possible because everything would be too far from the right floor. Closed windows will also prevent the noise from being carried, as most buildings tend to be well protected. Since the entire operation depends on the stable flow of electricity, rest in the middle of the wire will also cause problems. Of course, friends can shout, but human voices aren't strong enough to carry that far. The added problem is that a string can break down instruments. Then there is no accompaniment to the message. Obviously, the best conditions will involve less distance. Then there will be a bit of a potential problem. By face to face with acquaintances, the least thing can go wrong. (p. 719) Ridiculous, does it? Some participants get only this paragraph, and they don't think it makes sense either. They also can't remember it well. Another group of participants saw this picture before reading paragraphs (from Bransford and Figure Johnson 1, p. 718): Suddenly paragraphs make sense, right? This group of participants definitely thinks so, and can remember it well too. Another group of participants saw the same picture after reading the paragraph, and the fourth group only saw some of it before reading the paragraph, with enough lost to make it difficult to tell picture it about. These two groups cannot make sense of paragraphs, and they don't remember much either. In this experiment, you can think of pictures as a schematic. It works to structure the information you get in paragraphs, and choose what you remember about it. Without that structure, you have nothing to choose what to remember, so you don't remember much of anything. And the fact that the picture only works if you give it to participants before they read a paragraph is important, since it shows that the schema does their work on coding, that is, when you save new information. In subsequent experiments, participants had read paragraphs like this: The procedure was actually quite simple. First you manage things into different groups. Of course, a pile may be sufficient depending on how much to do. If you need to go elsewhere due to lack of facilities that are the next step, otherwise you are already well set. It is important not to overstage things. That is, it is better to do too few things at once than too much. In the short term this may not seem complications the essential bucks can easily arise. Mistakes can also be expensive. At first the whole procedure will look complicated. Soon, it will be just another ahs of life. It is difficult to predict any ending to the need for this task in the future, but then one has never been able to tell, After the procedure of completing a person arranges the materials into a different group again. Then they can be admitted to the appropriate place. Eventually they will be used again and the whole cycle then needs to be repeated. However, that is part of life. (p. 722) A third of participants only heard paragraphs, and as in the last experiment, they didn't think it made sense and couldn't remember a jack about it. Another third of participants were told that the paragraph was about doing laundry before they heard it. These participants thought it makes sense, and remember a lot about it. The third set studied paragraph topics after they heard paragraphs. These participants didn't think it makes sense, and like the first batch, couldn't remember much about it. In this case, this topic serves to activate relevant schematics -- doing laundry -- and unlike in the first study, it is the schematic that participants already have a place in their heads. Just like the pictures, though, this topic helps participants to exercise paragraph structures so that they can make sense, and this allows to remember more about it. That's choice, baby. So that's Bransford and Johnson, one of my favorite sets of studies. Next up, whether it's Bransford and Franks with integration or Sullin and Dooling with interpretation (I haven't decided yet), whenever I am I around it. 1Bransford, J.D., & Johnson, M.K. (1972). Contextual prerequisites for understanding: Some investigations of understanding and recall. Journal of Oral Learning and Oral Behaviour, 11, 717-726.2Book I, Part III, Section III. We've talked about this paper at PNAS around the lab, so I think I'll share it. Hassabis et al, publishing in PNAS, has shown that patients with hippocampal damage lack the ability to imagine novel situations. This is a really interesting discovery, but it's okay I want to talk about ... In a paper I discussed the other day, Atran and Norenzayan argued that one of the most important factors in determining whether the religious narrative was successful is how unforgettable. The narrative is easy to remember, while it is difficult to remember the forgotten narrative. By... In the past, I often wonder how journalists chose which study to write about. The obvious answer is that they chose a study that would get readers or viewers, but given how few stories they fit the research they wrote, it seemed to me like they could choose any study and ... In many ways, my career has been dominated by efforts to make work bear much in common as with much fun as possible. Today's article only confirms that the rules. Yesterday afternoon, I spent an hour watching World Cup football matches, and for once I could claim that it was completely relevant to... To...

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