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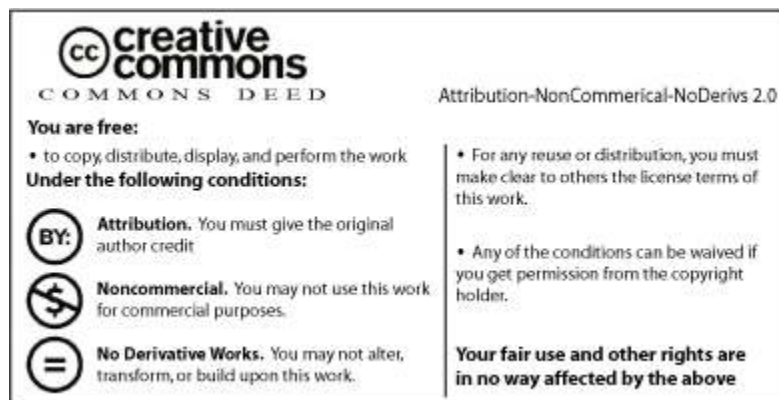
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**Dr. Stanton Wortham,
University of Pennsylvania
Wharton School of Business**

**Theories of Learning:
Cognitivism**

Transcription of Audio Segment



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Stanton Wortham: Now, I would like to go on and talk about cognitivism and the theories and the conceptions of human nature underlying cognitivism. As you probably know that about 40 years ago or so there was a transition in the academic world from the hegemony of the behaviorist, who controlled academic psychology departments, but also many other departments by extension. Their view of what people were about and what learning involved was dominant, and you couldn't cross it.

There was this developing movement in the 1950s and then it strengthened in the 1960s with Chomsky that overthrew the behaviorist dominance. In academia to get rid of somebody they have to die, and so it took a while for the transition to take full force, but by the end of the 1960s it was pretty clear that behaviorism was on its way out, and then after all those tenured folks died off by the 1980s, it was pretty much dead.

Nowadays, you don't find academic behaviorist anymore. The behaviorist doesn't care how the organism gives the response, all the behaviorist knows is that in this context, the pigeon pecks the green disc, and that's all it matters. It doesn't matter if the pigeon is thinking anything, the behaviorist doesn't deny that there is something going on in the pigeon's little head, there may well be, but it just doesn't matter. All that matters is that in this context the pigeon behaves in this way.

From a cognitivist point of view you want to know what's going on in between the stimulus and the response; what does the organism, say the person, think about that context, and what the organism thinks about that context is going to shape what it does, right? This is what the cognitivist thought.

They said that, the way of putting it was, there is a mediating step in between the stimulus and the response, in between the context and whatever you happened to do in that context, and that mediation is a set of representations, it's a set of concepts or theories or views of the

world, and ways of thinking inferences that you would make based on these views of the world.

So, when the pigeon or the person shows up in the box, and there is a green disc, that it's not just a matter of exhibiting a behavior, it's a matter of what does the person think that disk is doing there, and what do they think they are doing in this box anyways? It's kind of strange to be in a big box with the green disc in it, and so the person is trying to figure out, what am I doing here? What is this context? What's my goal, and how do I make sense of what's happening to me right now?

That process of internal mental representations is something that the cognitivist started to study. What are the concepts? What are the theories of the world? What kinds of inferences are people capable of making?

Basically there were two kinds of processes that got empathized. Piaget had these terms; assimilation and accommodation. Basically what he meant was that, when we enter a context, the first thing we do is we try to assimilate the context to our view of how the world works.

So, we have a set of views already. Anytime you come into a setting, you always have some beliefs about what the world is like, and what happens in places like this. The first thing you do is you try to make sense of where you are and what's happening to you, based on what you know. You try to fit it into your existing concepts. Those concepts predict things you should do, goals you should have, outcomes you can expect.

Sometimes you hit a context where the context just doesn't behave the way you think its going to behave. So, you have a view of what people like this do, and you show up and there is another person like this, but they don't do what you expect. Then eventually you have to change your view, you have to change your concepts, you have to change your theories.

I thought that if I was obsequious to every boss that I would get what I wanted, but here's a boss and I am obsequious, and I am not getting what I want. So, you can either blindly keep on doing the same thing, blindly keep on assimilating to your existing view, or you can change your view and say, maybe this is a different kind of person. Maybe I need to try a different sort of strategy with this kind of person.

So, the cognitive revolution was about studying these processes of how do people develop these theories of the world, these concepts, these expectations, plans and how is that they change them. Learning is about changing, and learning is about deciding I need a new one.

So, from the perspective of a cognitivist educator, if you want to help people learn, you have to help them build new concepts, new theories of the world. In order to help them do that, you've got to set up a context where they run into something they haven't seen quite that way before, and you have to encourage them to think about it in a new way.

It's important to see, but you can't force them to think about it in a new way, because they have to build this understanding, you can't go grab someone's representations out of their head and tweak them and stick them back in. What you have to do is you have to get them to change, because in cognitivist approaches to learning the learner is more active. The learner is actively trying to make sense of the worlds. The learner is actively trying different ways of imagining what might happen in this context.

Then the educator has to try to get the learner to try new ones, to build new ones, but just like with any active person out in the world, you know from raising children perhaps, that you can't make them do things. You have controls over rewards and reinforcements enough for a while you can make them do stuff, but there comes a time when you just can't, and they are just not going to do that anymore. Something inside them has to change to get them to do what you want them to do.

Cognitivists are very interested in that kind of process, where the educator can't force it, the educator can encourage, but the educator has to facilitate the learner to do something differently.

There are many types of cognitivism. I have gone quickly through the basic aspects of the theory. Some approaches to cognitivism believe that they are innate structure, so they believe that the theories that we used to make sense of the world are innate, we were born with them. Other approaches think that they are not innate, they are all built. The individual child or adult builds them on his or her own over time.

So, there are differences between the theories, but they all hold that there is this mediating step in between the stimulus and the response. We don't just react to the world, we think about the world, we make sense of the world, and we react based on the sense we are making of it. They all think that learners can't be forced, that learners have to use their own resources, use their own models to make sense of what's happening.

What this means in educational terms is that more extreme cognitivist approaches to education will just setup an environment and let the learner go.

So, you would take a child, you would provide a bunch of interesting things to play with, you might pose a few puzzles, you would point out that this doesn't make sense, and then you would just let the child go, because the child has to mess around with the stuff.

The child in these extreme classrooms, there would just be a bunch of blocks and a bunch of pads and papers, a bunch of movies, and a bunch of puzzles, and the teacher would say 'hey, go!' If the kid has a question, the teacher answers the question. But the notion is, the child has to figure out for himself or herself what's going on in the world, and the child has to be left to do that.

Notice how different that is than the behaviorist view, which says we have to get the learner in an environment where we can try to make the learner do what we want the learner to do by providing the right reinforcements.

So, cognitivism rests on very different conceptions of human nature. Cognitivism believes first, that people have an intrinsic motivation to know. People just have this desire to learn what it is that's going on around them. They are curious, kids are curious, and adults are curious too until you beat it out of them.

So, that's one of the striking things about school, from a cognitive point of view that little kids are really curious. So, they show up in school and they want to learn stuff and they are interested in things. By the time you sort of force them a diet of standardized curriculum for ten years, you get them in ninth grade and they are not interested anymore, and you are sort of beating the motivation out of them. So, it is possible to do that.

There are famous studies that show that if you take a child and you give the child a bunch of markers and some paper and say go ahead, go do it. Children, most of them, will have fun coloring, they will just start coloring, they will use the markers, they will think it's great.

Then, you do that to a group of kids, then you take the group and you split in two randomly. One group, you take them aside and you say hey. we will pay you \$5 to color with these markers, will you do that? They all say yeah, yeah, we like these markers. The other half, you just let them color with the markers again.

If you do that a couple of times what happens is, if you take away the reinforcement, so then you put them all back in a situation where they have the markers and the paper, but no more money, the ones who had been paid won't do it. They will say where is my money? I am not going to color unless you pay me. The ones who hadn't been paid will keep doing it because they like it.

From a cognitivist point of view, this shows that people are intrinsically motivated to learn, but extrinsic reinforcement can undermine that. So, extrinsic reinforcement can ruin this innate desire to just learn stuff, to be curious, to want to think up new ways of making sense of the world.

So, from a cognitivist point of view this innate desire to learn can be sort of overridden in the wrong context, but if you leave people to their own devices, that's what they are going to be like.

So, for a cognitivist really, for most of them, people are basically like little scientists. People are going around the world and they are trying to make good theories about stuffs. They are trying to make sense of things. They are actively making sense of the world. They are building theories. They discover things that don't fit with their theories, they build better theories. They keep going, that's what they are about. They go into new context, they build new theories of these context, then people are essentially building these new accounts of what's going on. They do it, not just because it's useful to them, it's fine that it's useful to them, but they do it because they are curious, because people like to make sense of stuff. People like to have accounts of things.

From this point of view it's also important to see that there is a basic similarity with behaviorism, the individual is the unit of analysis. So, the learner in this theory is the individual. There is an individual person, and that person is the one who has a bunch of accounts of the world and theories and concepts and procedures for making inferences, and that individual is going out making sense of the world. If we want to help someone learn, we have to work on the individual. We have to figure out what you know and what you don't know, we have to design an environment where you can go learn, you can build yourself a better theory of what it is we need you to know.

So, an individual is the unit, and behaviorism is the same way, that in behaviorism you look at

an individual's behavior, and then you shape the individual's behavior.

According to cognitivists, it's not that people aren't egocentric or selfish, people can be selfish, but they are adapting better schemes. The way that they go about satisfying their wants is by building better schemes, better theories, better accounts of the world. On some cognitivist theories people develop toward being like a pure scientist. Someone who really isn't interested in selfish motives, but just wants to make sense of the world, who is sort of rational in a perfect sense.

Sometimes some theories believes that's what humans develop toward, others don't, they think people build theories of the world in order to get what they want. So, it's not incompatible in that sense.

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