"Experts" versus trained dream coders: Does it make a difference?

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Summary. This is a consideration of possible issues in using expert versus trained dream coders. Our thesis is that due to their lifetime training, expert coders would be more aware of subtle aspects of their area of their expertise in dreams. Two domains are discussed video games and religious/spiritual experience in dreams.

Keywords: dream content, dream coding, expertise

1. Introduction

O Dissolving the barrier between persons and science, Rogers wrote that "[s]cience is not an impersonal something, but simply a person living subjectively another phase of himself" (Rogers, 1955, p. 278). Far from being a dismissal of scientific method, his goal was to demonstrate the importance of understanding both aforementioned elements. Science cannot be divorced from personhood, but it is a tool that persons use to check their limited perspectives against a broader, more systematic understanding of reality.

Recognizing the influence that personhood—especially the facet of experiential history—exerts on scientific studies is especially pertinent for researchers. In order to account for bias in research assistants who are coding dreams for specific content, a standardized training process is usually required. Therefore, coder training plays a vital role in our program of research on the effects of gaming on dreams. Often however, our student research assistants are already long term gamers prior to joining the study, and thus can be considered gaming experts. Though this is not exclusively the case, it has nonetheless made the issue of expertise increasingly important.

2. An Overview of Expertise

Research on expertise has shown that it takes up to 10 years of training and practice, or 10,000 hours, to be considered an expert (Ericsson, Prietula, & Cokely, 2007). The idea of experts in video game play has long been understood as important when examining effects of such games on a variety of skills. Zagal and Bruckman (2008) explain that, in the field of game studies, there is the usual challenge of teaching "experts", that is hard core gamers, about the field of gaming. Boot, Kramer, Simons, Fabiani and Gratton (2008) reported that the attentional and memory improvements found for expert gamers was at a skill level that non-players, trained with up to 20 plus hours of play, could not touch. These researchers estimated expert players came into the laboratory condition with tens of thousands of hours of video game play. Thus, the rough definition of "expert" tied to 10,000 hours of practice seems to apply to high end video game play history. Further, it hints at the expansive role of gaming in these individuals personal histories.

Gaming expertise is unlikely to be an issue if the dream content being coded for is unrelated to gaming. In the case of game related dream content however, the use of experts whose experiential histories are weighted heavily towards gaming might warrant further consideration. In response to questions regarding the continuity hypothesis, Gackenbach, Sample and Mandel (2011) examined dreams collected the night after playing a video game from several previous research studies. They found that 63% of 182 last night dreams collected after video game play the day before had no game play references in their dreams. The other 37% had three types of game play references: in the dream the dream ego is in the game world, in the dream playing a video game is mentioned or in the dream games are generically mentioned. The majority of the incorporations were the dream is the game world. In this study, the scale used was developed over time in several research studies and the coders were primarily, but not exclusively, gamers. That is, individuals with a long history of video game play. However, from time to time non-gamers, those with very little background, will code dreams for gaming type information. It is not always possible to get research assistants with a specialized background.

This being the case, we decided to take a closer look at how expertise might inform the coding of video game content dreams. In order to compare this specific concern to at least one other type of dream content analyses, we decided to consider expertise versus the lack thereof in the coding of spiritual and religious dream content in adding to gaming dream content. We hypothesized that experts would code more and subtler content in dreams in the area of their expertise.

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3. A Closer Look at Expertise and Coding

Our exploration of this topic took shape as a two-part, small-scale, informal inquiry. It involved five research participants: two women and three men. All were undergraduates or recent graduates of the same university at the time of their dream coding work, and all had taken senior level psychology classes. They had worked on several projects over a two year period. Some participants were paid research assistants, others were volunteers. As part of our inquiry, we casually ascertained that they had varying levels of experience with gaming and religious/spiritual topics. Participants engaged in either part of our inquiry were asked to code a substantial number of dreams for whichever of the two categories was being addressed. Anecdotally, we pitted the responses of those coders who might be considered experts against those of the decided non-experts.

While both expert gamer coder (exC) and non-expert gamer coder (nonexML) started gaming in early grade school, exC gamed seven days a week while nonexML did not game at all. ExC had gamed between 5,000 and 10,000 hours in his lifetime while nonexML had only gamed 101-1000 hours in her lifetime. ExC frequently read about games while nonexML rarely did. Likewise, exC frequently discussed gaming with friends and family while nonexML never did, except during our research meetings of course. NonexML reported some family influence on her gaming in terms of her brothers' play, while exC said there was no such influence. Finally, exC played voluntarily while nonexML played both out of a sense of obligation and voluntarily.

These same comparisons were done for the research assistants who coded the dreams for religious and spiritual content. In this case there was one expert coder (exM) and two non-expert coders (nonexDS). The non-expert response was the average across the two non-expert coders. ExM was exposed to religion/spirituality her whole life as was one of the non-expert coders. However, the expert coder reported that her involvement while due to family influences initially, has continued her "exploration" of these topics on her own while the one nonexDS coder felt that his exposure was obligatory due to his mother's influence. The second nonexDS reported exposure as voluntary. In any case, exM practiced her faith once or twice a week while one of the nonexDS practiced once a week and the other not at all. Lifetime religious/spiritual practice was 5,000 to 10,000 hours for the exM and less than 100 for one nonexDS but 1001-5000 for the other nonexDS. Stronger differences between the experts and non-experts showed up in their reading. The exM frequently reads about religion/spirituality while the nonexDS coders rarely do such reading. Discussion with friends and family on religious and spiritual issues were also frequent for the exM but only rare to moderate for the nonexDS. While the distinctions between the expert and non-expert coders were more dramatic in the game coding than in the religious/spiritual coding, still there were differences.

In the end, the considerations for our inquiry seemed to show some merit. In both game and religious/spiritual dream coding, we found some indication that specific expertise informed the coding in the direction of the coders background.

4. Implications

Expertise of five student research assistants, in terms of video game history or religious/spiritual history, was ascertained to examine the relative effects of expertise versus training on dream coding. Our observations suggest that the coders in the video game situation were more extreme in their expertise while those in the religious/spiritual situation were closer in their histories. We are pointing out here that experiential difference prior to training may affect subsequent dream coding.

5. Coders at Work: An Even Closer Look at the Judgments of Experts versus Non-Experts

For the religious/spirituality coding there was one analysis, sum of the HVDC adapted scales, where the expert coded more from the Castro et al. (1999) scale. Here is an example of a dream where the expert coded more such content than the non-expert:

> *I was sitting in a group of about 10 of my friends at someones house. We were engaging in a conversation about God. Everyone was laughing and having a good time. Some were sitting on couches and the others had pulled up chairs and we were sitting in a circle. I felt a little agitation. After some time, there was an awkward silence. Here I asked one of my friends, i know him very well from Calgary, a question. I asked him if he knew a certain individual named Jagpal Singh from England. He stated he had met him a few years back when he had come to Calgary for a few Religious gatherings. He said he knew him quite well now because they had kept in touch since then. I then asked him if he knew how old he was he said he was 21 and then started to laugh, but I said no he has got to be older than that. He still insisted he was 21. We then continued to talk about how he was a nice fellow. I also told him that he was married to the sister of a good friend of mine (Subject # 19.1).*

In this scenario, the expert saw more characters and settings of a religious or spiritual nature in this dream than the non-expert. Given the reference to God and to a religious gathering, it's surprising that the non-experts did not code this more as religious/spiritual.

Here is another example where the expert coded more religious or spiritual characters and emotions than the non-expert:

> *This dream occured all over a city. At one point I am in my house, and at another point I am going to some kind of military base. There is something special about me that they want to use, but all I know is I have the ability to stop some bad things from happening. However every time I use this ability I feel more and more exhausted. I dont like the head of the military operation, but I have not learned why yet, and I have been given someone who will drive me in a disguised truck to where we need to go. I asked him if I can just drive a motor bike myself and he smiles kindly at me and replies, "Show me your licence and I'll let you drive what ever you want", inspiring a groan from me as I flop back into the chair. I like this man, he seems to be one of the few people with humor in my life. Some different creatures try attacking us on our way there, though I only remember the first two. The first one was a smiling person, for once I cant tell the gender, as it speaks*

and tells me that my life belongs to him. Thankfully he revealed his sex or I wouldn't have been able to tell. He then grinned showing two large fangs, and I grinned back showing that I had four. His face dropped at this and he scowled at me, not believing that he had come across a creature like me. We faught on the back of the long truck, and I managed to send some kind of energy ball at him that knocked him over. The second creature that attacked us was a small beast. Glowing red eyes and sleek golden fur surrounded this thing as it bit into my shoulder. I can feel the pain shooting through my body as I let out a scream of anguish, arm twitching. My driver is trying to keep the truck steady for me, but he managed to reach back and shoot the thing with his handgun, unfortunately a non-fatal shot.. I start to fight the creature but just as I was starting to win, I woke up. This dream is strange because I normally have the same type of dream every night, with the same person. (Subject # 132.1)

The reference to "ability to stop some bad things" sets up a potential mythological or spiritual theme with demonic overtones in the phrase "glowing red eyes". The spiritual element of this set of coding suggests a wide range of potential interpretations, which seemed in general to be more widely interpreted by the expert than by the non-experts.

There were more discrepancies between expert and non-expert in the game coding of dreams than in the religious/spirituality coding. The first was in terms of an assessment that the dream is the game. Here is an example of that where the expert saw this as a game while the non-expert did not:

I had a dream that I was in a large but small world, it would shift. I dreamt that the whole world was having a dodge ball fight (probably because i watched Glee that night and they had a dodeball match) However the world wasnt normal like i would see everyday, in a dream state there wasnt anything specific more of a giant blur... So, at any random time a huge (much bigger than me) round object, would strike the ground around me, like it was trying to hit, and i thought kill me. However I could somehow throw a normal sized one back or away from me, and it would grow larger and go off into a distance i couldnt see. This would shift in and out. I knew I felt scared though, like i couldnt react fast enough when trying to run away. i must have been turning in my sleep.. i usually do when i have vivid dreams. the dream ended to something completely different but it was once again a hostile dream. (Subject # 159)

Even though the dreamer themself attributed the dream to a TV show, the skirting of a ball is very game like. It occurs in a wide variety of video games from casual genres to more serious ones. Here is another example:

So I was in a diner in a desolate fiel, then a military convoy rolled by and when i asked them what they were doing they said they were going to fight robots in a city. this random guy asked me if i wanted to go to the city. i said ya, and he gave me a jet pack, then i realized that could not be happening, and i woke up. (Subject # 161)

In addition to the robot fighting and jet pack references, typical content in video games, this "dream is game" assessment was also lucid, which has been found in gamers in some of our research (Gackenbach, 2006).

As with the religious/spirituality coding, the sum of the adapted HVDC scales coded for gaming content also resulted in a coder difference favoring the expert. Here is an example with overtones of the dream is game and of HVDC components:

i was shopping with my mom at ….. mall, we were walking on the upper level by the movie theatre and i turned around and she was gone / the mall was empty and i could hear little whispers almost as though i was in a vertigo and i couldn't find my way back to reality / i eventually saw a group of tall built men (almost like a gang) with oversized guns in there hands. / next i was outside running down the stairs and every where i looked i saw them and they looked like they were coming for me but i couldn't tell / they were staring at me, and they couldn't come close to me, almost as though i had a protective layer around me from the men physically but not from there guns. / i was scared and my chest felt heavy, i ended up back in the mall running around trying to find my mom but everywhere i went i couldn't find her, but i could here the whispers and see the men "following me". i panic in my dream. but then i wake up...

The loss of reality is telling in terms of the virtual versus waking sensory based versus dreamed realities, and the tie in by the dreamer to vertigo. Note that the vestibular system has been implicated in the felt sense of being here (Preston, 1998). Additionally, the weapons and the group of "tall built men" speak to themes in combat centric games. The mall is interesting as increasingly one seems "normal" settings as combat settings like the airport slaughter in a recent version of Call of Duty.

In some dreams both coders found game elements to code in the adapted HVDC but the expert found more, as in this example:

I was in my house and the alarm purposely went off. My family (6 of us, a 12 year old sister, 15 year old sister, 13 year old brother and parents) and I set a trap for the Zombies. I was left with a nerf gun as my only weapon while everyone else had a gun or bunt object. the zombies got into the house through the front door and we fire away and fight them. I was angry my pro-killing-zombie cousin was absent. My friend was over and he gave up fighting so I try and knock sense into him by kissing him and hoping this is a dream because I dont want to cheat on my boyfriend. My friend gets up and we head onto the top my house with my family. we are swinging on vines that are on the trees close to my house shooting at them and swinging at them. All of a sudden im in the dark in my house alone dying and sad, but not zombies around me.

In this dream the expert's sum of HVDC subscales was five while the non-expert was three. In other words the expert saw evidence in it of characters, activities, emotions, settings and objects of a gaming nature, while the non-expert saw only characters, activities and objects. While the emotion difference is somewhat subjective, the knowledge that such zombie attacks happen in normal settings, like the home, is something the expert is more likely to have.

The final difference, which appears to flip the direction of the previous findings, was related to the ESRB scale sum, which was primarily accounted for by the violence coding. The non-expert saw more incidents of violence. It should be noted that for this dream coding the research assistants were instructed to code all dreams and not those that they felt were game related dreams. Therefore, the apparent re-

verse difference in amount was more likely due to this different instruction. Dreams the non-expert coded as violent included instances of anger with a dad, a tidal wave, and a fight with a boyfriend. None of these dreams were seen as violent by the expert coder, while in this dream both saw violence:

I had a dream that my whole family went to Ethiopia for vacation. Ethiopia is where my family is from so it was a great feeling for my parents to take us to where they grew up. However, in the dream, I witnessed the beautiful scenery and the wild animals just walking around carelessly. There were many families from America and Canada taking pictures. As we were walking towards the animals we were told not to get too close because it would be dangerous. Unfortunetly, we were too late and the animals started to charge at my family. The scary part about it was that my father actually got rambled my a rhinocerus and was knocked out. That is where I woke up sweating and panicking looking to see if my father was actually okay!

6. Limitations and Conclusions

Several limitations are apparent in our investigation. First, is that we are examining only five coders across only two types of coding. While the number of dreams compared in each group was large, the coders were few. This might have impacted the results, which showed that, while the level of expertise for both types of expert coders came close to the 10,000 hour norm in the literature on expertise, the difference between expert and non-expert was more pronounced in the gaming pair than in the religious/spiritual group of coders. Furthermore, the dream coding scales used for comparisons are relatively new so individual differences, aside from expertise, could account for any differences found herein. However, reliability correlations were high between coders implying some sort of communicable concept being tapped in each scale.

Additionally, the apparent reverse finding regarding the ESRB and violence in dreams, favoring the non-expert could be an example of stereotype threat. That is, the stereotype is that gamers are violent and thus their dreams must be violent. Alternatively, the expert may be responding against this in a defensive manner and thus not seeing as much violence in the dreams. Speculations of this nature however, are confounded by the sex of the coders: the non-expert is female while the expert is male.

The major concern raised by these considerations however, is the question, does expertise sensitize a coder to concepts not familiar with by the non-expert, or does it simply put a different filter on the eyes of the coder to look for gaming or religious/spiritual content where it may not exist? Accepting the ambiguity of the concept of spirituality, as acknowledged in the literature, and the obvious evidence of game content in dreams (e.g., specific characters, or activities), there are, nonetheless, instances that occur outside of these explanations. For example, the fairly typical chase sequence that occurs in dreams is easily seen as a game from the perspective of the game expert.

This uncertainty presents a challenge for researchers, particularly those working with coders. Understanding that "[s]cience, …as well as all other aspects of living, is rooted in and based upon the immediate, subjective experience of a person" (Rogers, 1955, p.277), they must determine how to interpret the inseparable combination of data and experiential history. For our study, the question is asked, how does expertise actually influence coding is it the case that expert coders add a dimension to coding that informs the analysis of dreams? The answer is maybe, but further inquiry is needed.

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