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COMMENTARY

Applying the Components Model of Addiction to Buying-Shopping Disorder and Hoarding Disorder: Further Issues and Controversies

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The paper *"Are hoarding disorder and buying-shopping disorder behavioural addictions? A conceptual review"* by Pickering and Norberg (2022) examined the extent to which buying-shopping disorder (BSD) and hoarding disorder (HD) can be classed as addictive behaviors. Using the components model of addiction (CMA; Griffiths, 2005) and the Interaction of Person-Affect-Cognition-Execution ('I-PACE') model (Brand et al., 2016), they reached the conclusion that both BSD and HD can (to some extent) be classed as behavioral addictions using these frameworks.

I have spent over 35 years researching behavioral addictions and have often been criticized for 'watering down' the concept of addiction and 'over-pathologizing everyday behavior' by applying the term 'addiction' to behaviors such as videogame playing, social media use, shopping, exercise, work, and sex. However, one of the main reasons I developed the CMA was to provide a framework in which any researcher could examine any behavior and assess the extent to which the behavior fulfills what I believe are the six core components of addiction (i.e., conflict, salience, tolerance, mood modification, withdrawal symptoms, and relapse). Pickering and Norberg claimed that the CMA *"purports that six core components are indicative of addictive behaviour based on evidence gleaned from the substance use disorders."* However, this is only partly true. I developed the model based on my own research into addictions to gambling and gaming using some concepts from the substance addiction literature (i.e., withdrawal symptoms, tolerance, relapse) with the components of mood modification, conflict, and salience being more rooted in the behavioral addiction literature.

The method of application used in the paper by Pickering and Norberg is similar to that I have used in some of my previous papers, particularly in areas such as exercise addiction, work addiction, and videogame addiction. I have also used the CMA with my colleagues to examine behaviors that most people (including many addiction scholars) would not normally consider addictions such as sun tanning (so-called 'tanorexia'), dancing (which we argued was a type of

exercise addiction), studying (which we argued was a type of precursor to work addiction), and muscle dysmorphia (which we argued was an addiction to body image). My basic proposition has always been that any behavior that fulfills my six components of addiction should be classed as a genuine addictive behavior. If only some of the components are present, then I do not operationally define that person as being addicted. If (say) four or five components are present, then these individuals are more likely to be classed as problematic users of the behavior being examined. Ironically, even though I am often accused of 'watering down' the concept of addiction, using the CMA properly (and how it was meant to be used) means that very few individuals are ever classed as having a genuine behavioral addiction.

Although I am grateful that Pickering and Norberg have used the CMA to support their arguments that BSD and HD may be addictive behaviors, it could be argued that the way the CMA has been applied is not in the way that I use it myself. More specifically, when using my framework for assessing whether behaviors are genuine addictions, I have always applied it at the micro-level (i.e., person-level) rather than at the macro-level (which is arguably what Pickering and Norberg have done). My own approach has always been to try and confirm whether there is evidence of the six components in the individuals themselves. The approach taken by Pickering and Norberg looked for empirical evidence of the six components being present for BSD and HD across the extant literature (i.e., looking at whether there was any evidence for the six components across a range of studies). While this is laudable, it could still be the case that finding evidence of (say) withdrawal effects or relapse among a group of individuals in one study, does not mean that these same individuals showed any evidence of (say) conflict or tolerance. Put simply, showing that each component has been identified and reported somewhere in the literature does not mean that all six components are simultaneously present. What Pickering and Norberg's approach does do is provide insight into how each of the six components might manifest in relation to BSD and HD specifically, but it does not demonstrate that all of the components are found among individuals at the same time.

Although I agree with much of what Pickering and Norberg argued, there are a few things in the paper that I would take issue with. The paper begins by saying that since gambling disorder appeared in the DSM-5 (in 2013) and ICD-11 (in 2019), *"the academic literature and mainstream media have suggested that numerous behaviours might be addictions."* This implies that behavioral addictions are a recent phenomenon when quite clearly this not the case. Exercise addiction (Baekeland, 1970) and work addiction (Oates, 1968) have appeared in the academic literature for over fifty years, and

research on videogame addiction began in the 1980s (Nilles, 1982), and internet addiction began in the 1990s (Griffiths, 1996). Some of the addictions listed as "speculative" (such as '*Instagram* addiction') are arguably more speculative simply because the *Instagram* platform is only a few years old. Other addictions claimed as being speculative (e.g., tanning addiction) actually have a relatively large literature base although much of this is in the dermatology field where the use of the term 'addiction' is arguably used differently than that in the psychological literature.

Pickering and Norberg claim that BSD and HD are *"highly related"* although there is arguably little empirical evidence for this. One of the things I have argued many times in my papers over the years is that addictions rely on constant rewards (i.e., reinforcement). An individual cannot become addicted to an activity unless they are constantly being rewarded in some way. While constant rewards are commonplace for those with BSD, that is not the case for HD. Ultimately, addictions (outside of individuals' biological and/or psychological predispositions) rely on the event frequency of an activity (Griffiths & Auer, 2013). Although most scholars in the addiction field accept that gambling can be addictive, not all forms of gambling appear to be potentially addictive due to their different structural characteristics. For instance, slot machine gambling has a much higher association with addictive gambling than bi-weekly lottery gambling (Griffiths & Auer, 2013). One of the main reasons for this is the event frequency. On a slot machine, the gambling is continuous and the event frequency can be 10-12 times a minute. However, the event frequency of a bi-weekly lottery is twice a week and discontinuous. In short, it is almost impossible to become addicted to a bi-weekly lottery if an individual is only rewarded up to twice a week. If a gambler has the time and money, they can gamble continuously. The same applies to shopping. If a shopper has the time and the money, they can shop continuously. Hoarding (while arguably continuous) occurs at a much slower rate, and the consequent rewards (if there are rewards) will also be much slower. In short, there is little in the hoarding behavior (in and of itself) that could become addictive in the same way as shopping.

In fact, the evidence for HD being a behavioral addiction is very weak. The data for tolerance, withdrawal symptoms, and conflict is arguably the weakest and the contention that a build-up of possessions over a life-time is clearly not an example of tolerance. If this was a behavioral indicator for tolerance then almost every person would be classed as meeting the criterion for hoarding tolerance because nearly all of us accumulate more possessions over a lifetime. I would also argue that the definition used by Pickering and Norberg for mood conflict (i.e., *"disagreements within oneself or with others that arise due to excessive and persistent engagement in an activity and the inability to stop the*

behaviour") is too narrow and does not accurately capture my own view of what conflict constitutes (i.e., an activity that is so conflicting that it compromises occupational and/or educational tasks, and relationships with others, as well as intra-psychic conflict [e.g., subjective loss of control]). There is almost no empirical evidence that hoarding leads to occupational and/or educational conflict, and as Pickering and Norberg rightly note, there is little empirical support that hoarding causes family and/or social conflicts.

As Pickering and Norberg also point out, the CMA has already been used in the development of a screening tool (that I co-developed) to assess the risk of developing shopping addiction (i.e., the Bergen Shopping Addiction Scale). I have also co-developed many other psychometric instruments that assess the risk of other types of behavioral addiction using the CMA (e.g., sex addiction [Bergen Sex Addiction Scale], work addiction [Bergen Work Addiction Scale], exercise addiction [Exercise Addiction Inventory], social media addiction [Bergen Social Media Addiction Scale], pornography consumption [Problematic Pornography Consumption Scale]). However, it is unlikely that a screen for hoarding disorder based on the CMA will ever be developed because there are so few hoarding behaviors that can be characterized an/or adapted in a similar way to behaviors like shopping, gambling, gaming and various online behaviors. One of the defining features of behavioral addictions is salience where the activity becomes totally preoccupying and takes up lots of time. That simply does not happen in hoarding behavior.

Pickering and Norberg tried to argue that hoarding has similarities citing 'reverse salience', the concept I introduced especially for substance addictions (the idea that addicts only realize how important and salient the behavior is in their life when they are prevented from engaging in it, like a nicotine-dependent cigarette smoker on a long plane flight). Although the use of 'reverse salience' in the context of hoarding was an inventive use of the concept, I did specifically introduce it for addictions that involved the ingestion of a psychoactive substance to highlight that substance-based addictions have the capacity to occur concurrently with other addictions (such as an alcohol addicted to playing slot machines or a cocaine addict who is also addicted to sex).

I have also argued previously that two behavioral addictions cannot occur concurrently because if all time is spent on one behavior it cannot be spent on another (Griffiths, 2016). Given that it is possible that an individual could be diagnosed with both BSD and HD simultaneously, this suggests that HD cannot be conceptualized as a behavioral addiction. However, there do appear to be some behavioral addictions that appear to co-occur (e.g., gaming addiction and social media

addiction, gaming addiction and gambling addiction) (Burleigh et al., 2019) but that is usually because the behaviors are not mutually exclusive (e.g., it is possible to engage in gaming on social media platforms). The accumulation of possessions in both BSD and HD is another behavioral crossover between the two conditions.

However, one aspect of hoarding that Pickering and Norberg mentioned but did not compare to other addictions was emotional attachment. Pickering and Norberg noted that individuals with HD can become emotionally attached to the things that they own. For over 25 years, I have written about the emotional attachment that slot machine addicts can have towards a gaming machine and who personify the machine that they play on. As one slot machine addict told me in one of my early studies: *"Gamble, gamble, gamble your life away…you've got to face the truth that you're having a love affair, and it's with a machine whose lights flash, takes your money, and kills your soul"* (Griffiths, 1993, p.36). I have also observed 'electronic friendship' among those addicted to videogames. In short, emotional attachment is not unique to hoarders as there is now lots of research on various forms of technological addiction showing that individuals can form emotional attachments with technology-enabled devices (e.g., smartphones, *iPods*, etc.).

Finally, citing Kardefelt-Winther et al. (2017), Pickering and Norberg say that the CMA *"lacks a coherent explanation of the etiological and psychological processes that give rise to addictive behaviour."* For the record, the CMA has never claimed to have any explanatory power. It is a definitional addiction model. The CMA complements my own 'global model of addiction' which posits that all addictive behaviors arise as a result of an integrated interaction between individual characteristics (e.g., an individual's genetic/biological predispositions, personality traits, psychological and emotional constitution, etc.), situational characteristics (e.g., accessibility to the substance/behavior of choice, marketing/advertising of the substance/behavior, etc.), and structural characteristics (e.g., the features inherent within the substance or behavior [price, toxicity, event frequency]).

In sum, although I agree with a lot of what Pickering and Norberg posit there are some things I would take issue with. Most importantly Pickering and Norberg (i) applied the CMA to BSD and HD in a way that is different from most others in the behavioral addiction field (including myself), (ii) took an inter-study approach rather than an intra-study approach when applying the CMA to CMA and BSD, (iii) appeared to suggest that behavioral addiction is a new area of psychological study but it is not, (iv) claimed that BSD and HD are highly related despite the lack of empirical evidence, (v) neglected to mention that emotional attachment is not unique to HD, and (vi)

neglected to examine the fact that addictions rely on continuous rewards (in the form of positive and/or negative reinforcement). While this is clearly present in BSD and akin to more established behavioral addictions like gambling and gaming addictions, there is little evidence that HD provides such constant short-term rewards. Moreover, it is highly unlikely that a screening tool for HD as an addiction would ever be developed based on the CMA.

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