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### THE BENEFITS OF USING THE UPPS MODEL OF IMPULSIVITY RATHER THAN THE BIG FIVE WHEN ASSESSING THE RELATIONSHIP BETWEEN PERSONALITY AND PROBLEM GAMBLING

Brunborg *et al.*'s recent paper [1] focuses on the relevance of personality factors associated with problem gambling (PG) in a study in which personality traits were examined along with subclinical gambling problems in a large-scale epidemiological sample. The study offers new insights into specific personality traits associated with PG, namely high neuroticism and low conscientiousness [1]. If these traits are indeed the most relevant personality dimensions linked to PG, then in our communication we would like to suggest using the UPPS model of impulsivity [2] as a more suitable framework to help us understand the relationship between personality and PG, rather than the Big Five model [3].

Based on the UPPS model [2,4], impulsivity is an umbrella construct reflected by four distinct dimensions: (i) negative urgency, defined as the tendency to act rashly while faced with intense negative emotional contexts (emotion-laden impulsivity); (ii) premeditation, defined as the tendency to take into account the consequences of an act before engaging in that act; (iii) perseverance, defined as the ability to remain focused on a task that may be boring and/or difficult; and (iv) sensation-seeking, considered as a tendency to enjoy and pursue activities that are exciting and openness to trying new experiences. In relation to the arguments developed in the current letter, it is important to emphasize that each factor has an analogue among the facets of the Big Five personality traits.

Negative urgency is related strongly to neuroticism (and not to conscientiousness, as stated erroneously by Brunborg *et al.* [1]). Furthermore, according to Settles *et al.* [5], negative urgency explains variance in externalizing behaviours beyond that accounted for by other personality factors that correlate strongly with neuroticism. Moreover, it has been shown that urgency is the impulsivity facet that distinguishes more strongly between treatment-seeking pathological gamblers and matched control participants [6]. However, in comparison to neuroticism, negative urgency is a narrower construct that has been linked to specific executive and affective

mechanisms (e.g. poor pre-potent response inhibition, heightened emotion reactivity) [7,8], allowing the development of more focused prevention and treatment strategies [9].

Premeditation and perseverance relate, respectively, to the 'deliberation' and 'self-discipline' facets of conscientiousness. These two UPPS components rely upon distinct underlying mechanisms [10], which are not linked identically to PG [11]. In fact, the lack of premeditation has been associated with poor decision-making abilities, which is an established hallmark of PG [12,13], whereas the lack of perseverance has been linked rather to attentional processes that are not necessarily altered in PG. Accordingly, it is not surprising that low premeditation (but not low perseverance) is elevated in PG. It is thus likely that screening tools able to distinguish between premeditation and perseverance are more relevant in relation to the prevention and treatment of PG than measures capturing only a broad and multi-determined construct of conscientiousness (such as the one used in Brunborg *et al.* [1]).

Finally, the construct of sensation-seeking (as measured by the UPPS) is probably more relevant in relation to PG than the broader construct of extraversion (measured by the Big Five and unrelated to PG in Brunborg *et al.* [1]). Indeed, although linked inconsistently to PG *per se*, a heightened level of sensation-seeking has been associated consistently with certain gambling preferences (e.g. gambling frequency, favoured types of games) [14,15], and thus constitutes relevant information when tailoring prevention efforts in gamblers (for example, in relation to specific game types).

#### Declaration of interests

None.

**Keywords** Gambling, impulsivity, personality, treatment, UPPS, urgency.

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