The Mythical Dual-Process Typology

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‘The central premise of the ‘two types’ framework has to do with alignment, or the degree to which the attributes within each category co-occur.’ Melnikoff and Bargh ([1], see p. 2)

Melnikoff and Bargh [1] offer a challenge to what they term the dual-process typology (see Glossary): specifically, the idea that cognitive processing is either unintentional, uncontrolled, unconscious, and efficient (Type 1) or intentional, controllable, conscious, and inefficient (Type 2). The authors argue that no one has ever tested this proposition and they provide examples of thoughts that do not abide by the proposed featural configuration of the typology (e.g., that processing might be unconscious but also intentional). These examples, it is argued, invalidate the common ‘two types framework’ and the authors conclude that distinguishing between two types of processes is ‘systematically thwarting scientific progress’ (Abstract).

However, the authors make a critical error that undermines this conclusion: one need not assert alignment among a set of features to argue that one specific feature can be justified as a dual-process dichotomy (in contrast to unimodal theories, which argue for continuous processing).

Melnikoff and Bargh [1] rightfully trace the origins of dual-process theories (DPTs) to a series of seminal papers in the mid-1970s and the critique of DPTs to the late 1980s and 1990s – specifically, the critique of versions of DPT that viewed it as two long lists of features that were always aligned. Where Melnikoff and Bargh go awry is in ignoring the past 15 years of work on DPT in which various theorists [2–7] have refined and fleshed out the implications of the original 1970s’ papers. Although individuals looking to apply DPTs to various psychological phenomena or to public policy may assume an alignment or a correlation between various features, research focused specifically on the specification of DPT has long ago left behind the ‘list-of-features’ view.

Importantly, DPT advocates such as Evans and Stanovich [4] have explicitly argued against assuming an alignment of the numerous characteristics that have been assigned to so-called ‘Type 1’ and ‘Type 2’ processes over the years (see also [8,9]). Instead, they distinguish between defining features – those that are used to define the two-types distinction – and typical correlates – those that various researchers have associated with the two-types distinction.

Rather than acknowledging these developments, Melnikoff and Bargh [1] challenge an outdated list-of-features view of DPT (i.e., the dual-process ‘typology’). Curiously, they stress consciousness as a key feature although it has played little role in recent revisions of DPT [4]. Melnikoff and Bargh also argue that the fallacy where Type 1 processing is necessarily bad/error prone and Type 2 processing is necessarily good/rational is ‘central to numerous dual-process theories’ (p. 3). However, this fallacy has also been strongly challenged by dual-process theorists [4,8,9]. Indeed, it has recently been argued in the context of a dual-process model that Type 2 processing may come in the form of either rationalization (i.e., motivated reasoning), which perpetuates bias in typical decision-making tasks, or cognitive decoupling, which overrides and corrects bias [6]. In fact, Morewedge and Kahneman [10], who the authors cite as advocating the good/bad fallacy, note in their conclusion that ‘in many situations, [System 1] automatically, quickly and effortlessly generates a skilled response to current challenges’, thus undermining the idea that the good/bad fallacy is central to their dual-process account (p. 439).

Although Melnikoff and Bargh mention Evans and Stanovich’s [4] concept of typical correlates, they do not mention the central concept of defining features. They instead pursue the side issue of encouraging skepticism about the claim that some features are correlated until more empirical evidence is available. While we concur that some dual-process theorists assume a correlation among non-definitional features (e.g., that autonomous Type 1 processing is typically faster than
of any specific theory but rather a class of theories instead of attacking a single dichotomy; the authors do not substantiate their typology claim with regard to any specific arguments, and they ignore recent research that has directly refuted this list-of-features view. They thus present their arguments as addressing the foundation of DPT when in fact it is largely irrelevant to current investigations of the theory (see [3]).

In 2013, Evans and Stanovich argued that ‘in general, these critiques (of DPT) are problematic because they attack not any particular theory but rather a class of theories, effectively treating all dual-process and dual-system theories alike’ (p. 224). This is true of Melnikoff and Bargh, who not only attack a class of theories instead of any specific DPT, but aim their critique at a set of assumptions that contemporary theorists have explicitly refuted.

We recently joined other researchers [1–5] in challenging the popular assumption that ‘consciousness’, ‘efficiency’, ‘intentionality’, and ‘controllability’ are correlated such that they form two clusters – those typically called ‘Type 1’ and ‘Type 2’, which we refer to collectively as the dual-process typology. More specifically, we argued that (i) these processing features have never been shown to correlate with one another, (ii) there are good reasons to assume that the features are, in fact, completely uncorrelated, and (iii) the features are incoherent, therefore (iv) the dual-process typology should be abandoned [6].

Box 1. A Dual-Process Theory without Correlated Features Is Not a Theory

PDES&T never explain how a theory could possibly consist of a single ‘defining feature’ if the ‘defining feature’ is not correlated with any other features. Theories must generate predictions [12], and it is unclear how any predictions can be derived from a ‘defining feature’ that is not correlated with anything. Indeed, PDES&T insist that the ‘defining feature’ of a dual-process theory need not correlate with effort, speed, controllability, intentionality, awareness, erroneous responding, or any other feature that has been associated with Type 1 and Type 2 processing – as far as we can tell, such a dual-process ‘theory’ would be incapable of making a single prediction. Thus, it seems to us that when PDES&T say that zero degree of featural alignment is required for dual-process theory, they are saying something deeply incoherent – that is, they are saying that dual-process theory need not make predictions.