

I cannot recommend this study because it lacks a proper control. The fundamental argument in the introduction is that the study offers a way to assess the neural bases of habits without the confound of extensive training. Specific PIT is touted as a means to this end, presumably because the often-demonstrated devaluation insensitivity of specific PIT aligns with habitual performance. So far so good; however, it then turns out that specific PIT is usually *sensitive* to devaluation (i.e., goal-directed) in human subjects, as it is in the reported pilot data, and this is attributed to the severity of the outcome devaluation triggering cognitive control processes, predicted to be implemented by the dorsal ACC. Here's the problem – the study doesn't have a condition in which the outcome devaluation procedure is successful, and yet not severe enough to recruit control processes: in other words, there is no demonstration of "habitual" specific PIT. Without such behavioral pilot data, the study seems meaningless to me. Involvement of the dACC in outcome devaluation sensitivity may well reflect an attentional control signal, but it doesn't say anything about habits, unless outcome devaluation *insensitive* behavior is firmly established in a contrasting condition.

Minor comments:

1. "An everyday example is continuation of snacking although having reached a state of satiety."

This is not a good example, because the outcome is being delivered/consumed contingent on the response, which should modulate habitual S-R associations. In other words, the example describes a "reinforced test" well known to disrupt habitual performance and reinstate devaluation sensitivity (see e.g., Figure 1b, Adams, 1982).

2. "Hence, an explanation for the motivational insensitivity in previous studies could be that the treatment was simply not strong enough to induce a motivation to control the cue-motivated "

A more obvious explanation is that studies showing devaluation insensitivity of specific PIT were done in rodents, and those showing sensitivity to devaluation were done with humans (Colwill & Rescorla, 1990, is not a proper comparison because those were SDs, not Pavlovian cues).