

# An exploration of the relation between cognition, personality and health

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## Key terms

**Executive control:** is an umbrella term for higher-order cognitive processes that help coordinate thought and action.

**Conscientiousness:** One of the Five Factor Model (McCrae & Costa, 1987) personality traits.

Executive control processes and the characteristics of conscientiousness seem to conceptually overlap (Figure 1).



Figure 1: Shared properties of executive control and conscientiousness.

## Introduction

Health is important! This is why finding the predictors of health behaviours, and using these predictors to create behaviour change interventions is of great interest to health psychologists. Recently, it has been proposed that “executive control” may be an important predictor of health behaviour (e.g. Allan et al, 2011; Hall et al, 2008; Mullan et al, 2011). On the other hand, conscientiousness already has well established links to longevity and health behaviour performance (Bogg & Roberts, 2004).

## Aims & predictions

The current study aimed to examine a range of potential relationships between executive control, conscientiousness, intentions, and health behaviour to gain a better understanding of the links between these important variables. It was hypothesised that executive control and conscientiousness would moderate the intention-behaviour relationship, such that higher scores on these variables would be associated with greater performance of health-enhancing behaviours (e.g., exercise) and less performance of health-damaging behaviours (e.g., smoking).

## Method

A multilevel diary design was adopted to assess the within-person effects of executive control and conscientiousness on multiple health behaviours (dental, sleep, breakfast consumption, snacking, fruit and vegetable consumption, caffeine consumption, alcohol consumption, smoking and exercise) over a fourteen day period.

An opportunity sample of sixty-nine individuals completed the procedure outlined in Figure 2.

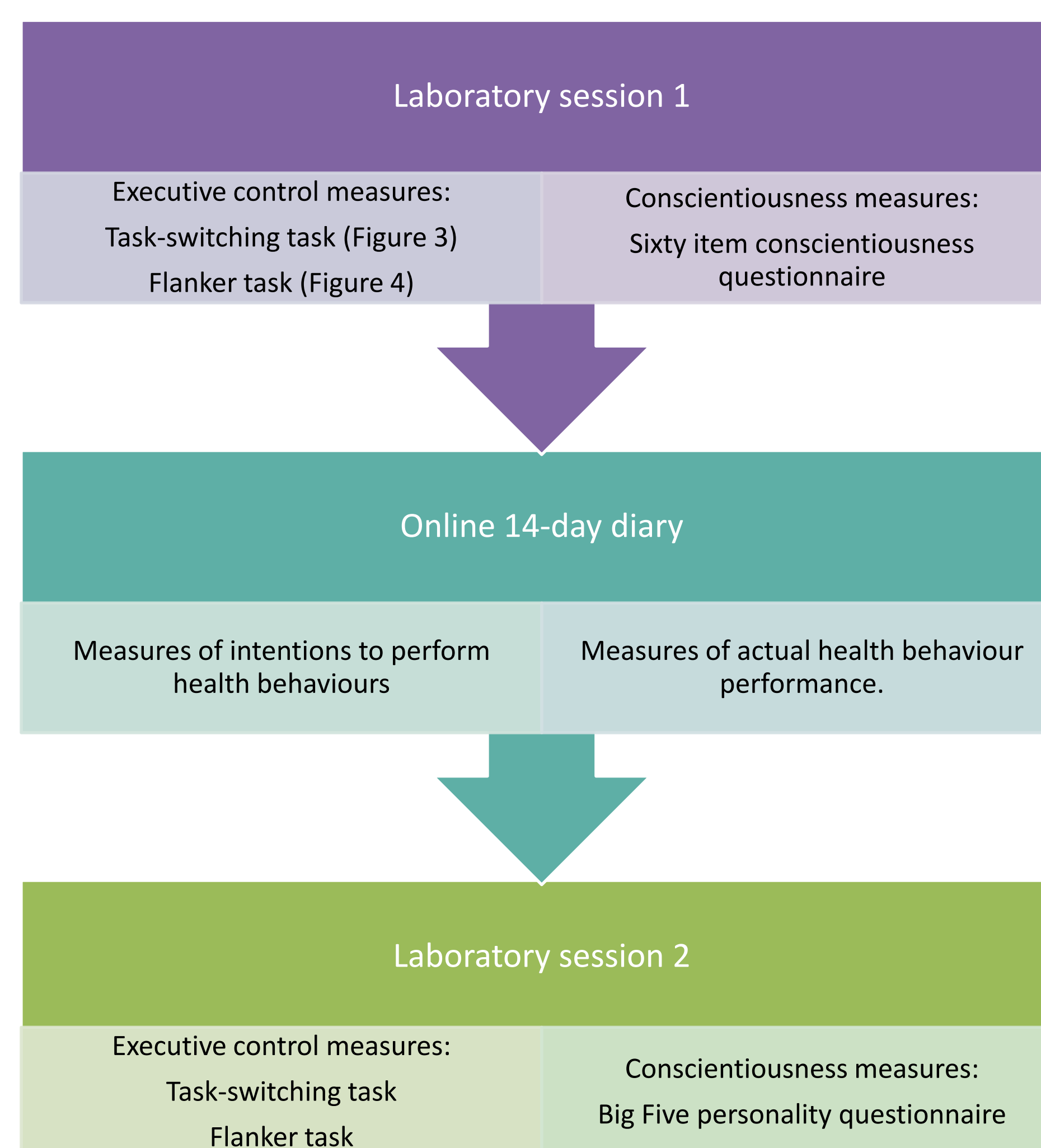


Figure 2: Schematic of study procedure.

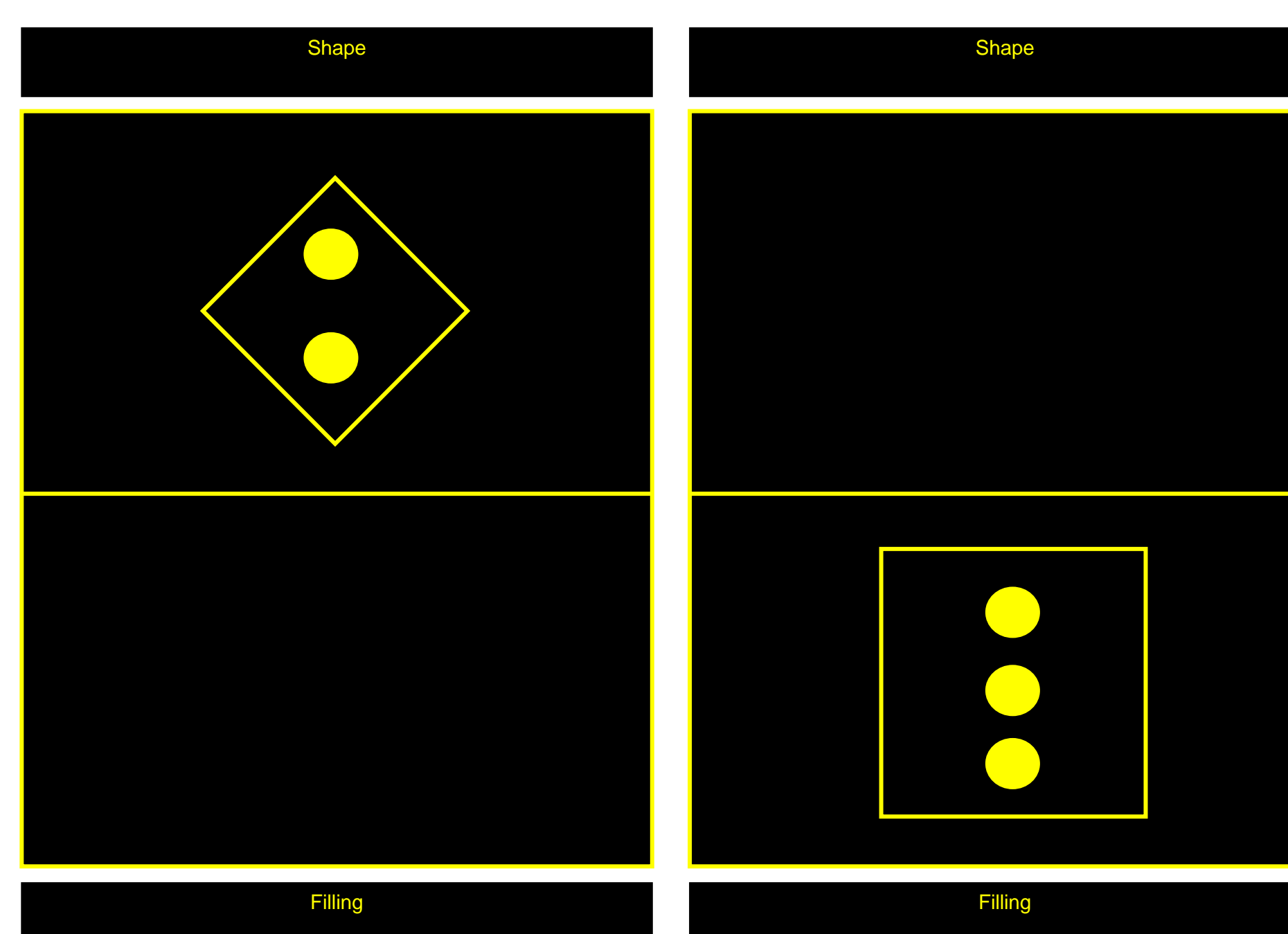


Figure 3: The Task-switching task. The left panel shows a diamond shape with a filling of two dots in the top half of the rectangle. When stimuli appears in the top half of the rectangle only the shape of the stimuli is to be responded to and the filling is to be ignored. The right panel shows a rectangle shape with a filling of three dots in the bottom half of the rectangle, therefore only the filling is to be responded to and the shape should be ignored.

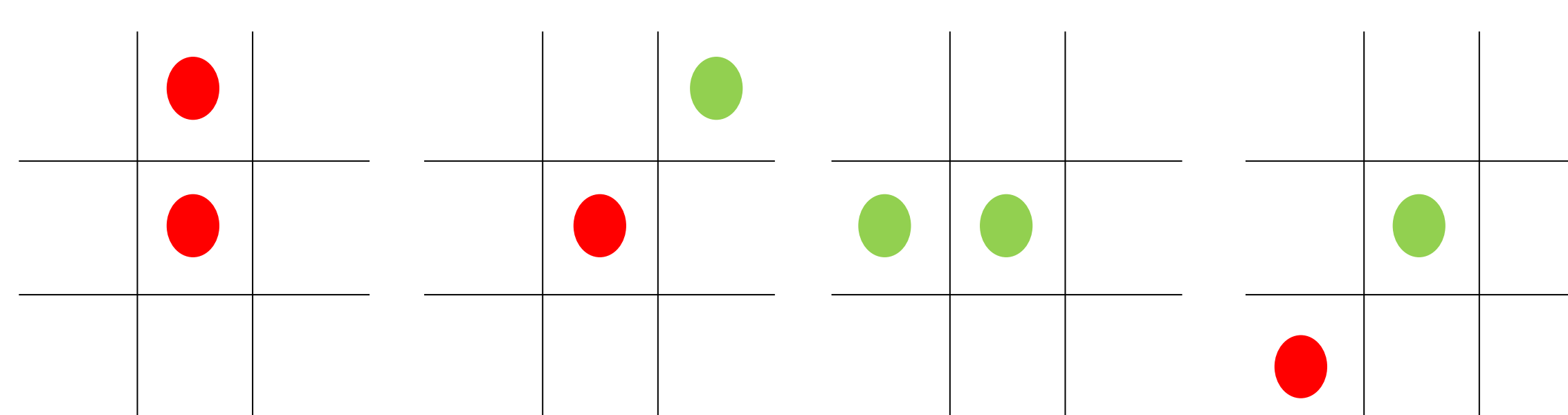


Figure 4: The Flanker task. The four grids above display the four possible combinations of balls the participant could see. The two panels on the left show the red ball in the centre of the grid, therefore the correct response is to ignore the red ball and press nothing. The two panels on the right show the green ball in the centre of the grid; therefore the correct response is to press the designated button.

## Results

Findings were mixed, but broadly both executive control and conscientiousness directly and indirectly via moderation of the intention-behaviour relationship predicted health behaviour performance.

Furthermore, it was found that the six facets of conscientiousness (orderliness, virtue, traditionalism, self-control, responsibility, industriousness) also directly and indirectly predicted health behaviour performance.

However, executive control and conscientiousness were found to not be significantly related (Table 1).

Table 1

*Correlation matrix between executive control and conscientiousness measures*

	Switch-task inhibition	Flanker task inhibition	Conscientiousness (60-item measure)	Big Five conscientiousness measure
Switch cost	.028	.216	-.162	-.082
Switch-task inhibition		.152	-.141	-.112
Flanker task inhibition			.053	.053
Conscientiousness (60-item measure)				.730**

## Conclusions

Overall, this shows that executive control and conscientiousness are independent and important variables for health psychologists to consider, as they are potential targets for health behaviour change interventions. Furthermore, it highlights that specific components of executive control and conscientiousness may be most important for health behaviour performance and may need to be targeted specifically to attempt health behaviour change.

## References

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