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Commentary

Failing to tell friend from foe: A comment on Wijn et al. (2017)

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Behavioural observation programmes are becoming increasingly popular at transportation hubs, sporting events, and other large crowd gatherings. Premise of these programmes is that malicious intention can be accurately deduced from observable behaviour. In a recent article published in this journal, Wijn et al. (2017, *Legal and Criminological Psychology*, 22, 378–399.) conclude that environmental cues improve the correct detection of participants with malicious intent. This conclusion can and will be interpreted as support for behavioural observation programmes. In this comment, we argue that Wijn and colleagues draw a fundamentally wrong conclusion from their data. What their data show is that malicious intentions could not be detected in any of the conditions. Their findings can therefore not be conceptualized as evidence for behavioural observation programmes. Rather, they add to the growing critique voiced towards such programmes.

Behavioural observation programmes are becoming increasingly popular at transportation hubs, sporting events, and other large crowd gatherings. Examples include Search Detect React, Predictive Profiling, and Screening Passengers by Observation Technique. Premise of these programmes is that malicious intention can be accurately deduced from observable behaviour. Such programmes have, however, been heavily criticized for lacking both a well spelled out psychological rationale, and empirical evidence for their effectiveness (Department of Homeland Security, 2013; General Accountancy Office, 2013; Ormerod & Dando, 2015; Weinberger, 2010; see also Linos, Linos, & Colditz, 2007).

In a recent article published in this journal, Wijn, Kleij, Kallen, Stekkinger, and Vries (2017) conclude that environmental cues improve the correct detection of participants with malicious intent. This message is evidently present in the very title of the article, ‘Telling friend from foe: Environmental cues improve detection accuracy of individuals with hostile intentions’, and is reiterated throughout the text. For example, the authors claim that their research ‘show that perceptible reactions to environmental cues can aid in the early detection of individuals with criminal intentions’ (p. 20). This conclusion can and will be

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interpreted as support for behavioural observation programmes. In this comment, we argue that Wijn and colleagues draw a fundamentally wrong conclusion from their data. What their data show is that malicious intentions could not be detected in any of the conditions. Their findings can therefore not be conceptualized as evidence for behavioural observation programmes. Rather, they add to the growing critique voiced towards such programmes.

The experiments

In two experiments, Wijn *et al.* (2017) tested whether cues that signal risk of exposure improved detection of people with hostile intentions. In experiment 1, the authors used eight video clips, with each video clip consisting of footage of two to four participants carrying a package from one point to another. Participants were either asked to imagine the content of the package was illegal (hostile intentions) or legal (no hostile intentions). Stimulus material consisted of that part of the video where participants passed a confederate dressed in a police uniform. This confederate uttered 'code red noted' when the participant passed. For half of the participants, these words were uttered facing the participant (strong cue), while for the other half, this was uttered facing the opposite direction (mild cue). The video clips were shown to 51 raters, who, for each participant in each clip, made a judgement whether he or she had malicious intentions or not.

In study 2, the authors set out to replicate and strengthen the findings of study 1 by increasing cognitive load. They predicted that environmental cues would particularly facilitate the correct detection of hostile intentions in participants experiencing high cognitive load. Video clips now depicted participants carrying a laptop bag across campus. This bag either contained two books (non-hostile intentions) or mock explosives (hostile intentions). The environmental cue consisted of a brief burst of white noise resembling a police walkie-talkie's static noise that was either played (cue) or not (no cue) as the participants walked by. In addition, participants were instructed to count their steps (high cognitive load) or not (low cognitive load). Twenty judges watched these clips and judged whether or not each individual was carrying mock explosive devices.

Table 1. Mean area under curve (AUC) with the corresponding 95% confidence interval (95% CI) for the different conditions in the two studies reported by Wijn *et al.* (2017)

	Study 1			
	AUC	95% CI	AUC	95% CI
Strong cue	0.55	0.47–0.63		
Mild cue	0.42	0.33–0.51		
	Study 2			
	Cognitive load			
		High		Low
Cue present	0.54	0.50–0.58	0.43	0.37–0.49
Cue absent	0.44	0.37–0.50	0.48	0.42–0.54

The results

Wijn and colleagues used the area under the receiver operating characteristic curve (A) to describe the judges' accuracy in distinguishing between participants with and without hostile intentions. This parameter varies between 0 and 1, with 0.5 denoting chance level performance and 1 denoting perfect discrimination (Zhou, Obuchowski, & McClish, 2002). The values for the area under the ROC curve that Wijn *et al.* found – together with the 95% confidence intervals (CI) – are displayed in Table 1. If the lower bound of this CI exceeds .5, judges' performance exceeded chance level. As can be seen in Table 1, in none of the conditions did the judges' performance exceed chance level. Whether being mentally taxed or not, and whether or not being triggered through a police officer or a walkie-talkie, the results consistently indicate that hostile intentions could not be detected above chance level. Whether it is in medicine or psychology, a test with such diagnostic properties would normally be considered ineffective.

The conclusions

Thus, the accuracy data from the two experiments reported in Wijn *et al.* (2017) allow for only one interpretation: Based on observable behaviour, the judges could not distinguish those with from those without hostile intentions. These findings contradict the very premise underlying behavioural detection programmes, namely that observable behaviours reflect malicious intentions. Surprisingly, the authors chose to ignore this finding and emphasize only the more trivial result that cues from the environment can raise the identification of individuals with hostile intentions, without mentioning that this increase is from within levels of chance to within levels of chance. As such Wijn *et al.* paint a misleadingly optimistic picture about telling friend from foe, whereas in fact their findings add to the growing literature voicing critique that empirical evidence for the effectiveness of behavioural detection programmes is lacking.

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