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We need to talk about super-recognizers

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Invited commentary on:

Ramon, M., Bobak, A. K., & White, D. (2019). Super-recognizers: From the lab to the world and back again. *British Journal of Psychology*.

Abstract

Whilst we agree with much of what Ramon, Bobak and White (2019) say, we emphasise the additional importance of taking into account the often-neglected psychometric properties of existing and future techniques.

Commentary

We agree with much of Ramon, Bobak and White's (2019) perspective on super-recognisers. Especially, their endorsement of the importance of the lab to world synergy, in which practical questions act as strong tests of theory and theories are in turn refined to cope with practical questions. This approach belongs in a time-honoured tradition (Baddeley, 2018) that has been fundamental to much work on face recognition (Davies & Young, 2017). We agree too that understanding the nature of laboratory and real-world tasks is crucial, as it is in almost any area of face perception research (Young, 2018).

More specifically, we acknowledge that many of us have been slow to appreciate the importance of individual differences, despite notable exceptions highlighting what might be learnt from combining individual differences and experimental approaches (e.g. Cronbach, 1957). The existence of a wide range of face recognition ability in the population also has substantial implications for widely-used theoretical ideas, such as face expertise (Young & Burton, 2018).

We wonder, though, in what sense super-recognisers *have* been "discovered"? Is what they do somehow qualitatively different from what most of us can manage, or is it just a convenient way to describe the top end of a continuum of ability? The latter seems to us at present more likely and carries the interesting implication that developmental prosopagnosia may simply represent the opposite extreme, rather than a distinct pathology (Noyes, Phillips & O'Toole, 2017). If this is correct, it seems more accurate to say that super-recognisers have been given a potentially useful label than that they have been discovered.

Such issues are critical to Ramon et al.'s claim that super-recognisers can "offer clues

to the underlying processes responsible for high levels of face processing ability". This might well be the case if super-recognisers are actually doing something different from what most of us do when we look at faces. But we don't think that conclusion is warranted from current evidence. Instead, we agree with Ramon et al. that there is at present "insufficient understanding of the functional basis of superior face processing skills".

Why do we know so little? Apart from the obvious newness of the field itself, Ramon et al. emphasise the lack of agreed criteria to define super-recognisers (cf. Noyes et al., 2017). In their view this is especially important because even putative super-recognisers' levels of performance can vary across different tests. Whilst this may indeed be the case, our opinion is that there is at present room for doubt about how to interpret these between-test differences. Instead, more attention must be paid to the psychometric properties of the tests themselves to interpret variability in performance. One important aspect of these psychometric properties that Ramon et al. rightly emphasise is whether a test can discriminate levels of performance across the full range of ability. But equally important are issues of test reliability (Mollon, Bosten, Peterzell & Webster, 2017).

In essence, any test score is an estimate that involves some mix of the person's 'true' ability and a component usually considered as 'error' that results from variability created through the participant's level of engagement, their lucky or unlucky guesses, and so on. This error involves partly random factors that can influence the score achieved in an upward or downward direction from the underlying ability.

Suppose, then, that there are no real differences in the type of ability evinced by people who are very good at face recognition. If we give a particular test of face recognition to a population and define super-recognisers as those individuals who achieve scores better than a given criterion, the putative super-recognisers we identify will actually be a mixture of what we might think of as genuine super-recognisers and others for whom any upward effect of random error was sufficient to nudge them above the criterion we set. Moreover, there may also be some less fortunate super-recognisers who we failed to identify because random error took them below our criterion. It follows that if we then give a second, different test of face recognition to the

same population, a somewhat different subgrouping of individuals may well emerge as meeting the criterion to count as super-recognisers, but it is simply error variance that lies behind these apparent dissociations.

In other words, differences in performance that result from measurement error and related factors are to be expected even when different tests are actually trying to measure the same underlying factor. This means that the psychometric properties of the tests themselves and the consequent base rates for these essentially meaningless differences need to be borne in mind before concluding that differences in test performance reflect genuine differences between super-recognisers. Such problems can in principle be addressed; they should not be ignored.

With these points in mind, we agree with Ramon et al. that accreditation of super-recognisers is likely premature and may be problematic. But if super-recognisers are indeed at the top end of the distribution of ability, we think it makes sense to place them in jobs that match their skill. Even if they turn out to offer benefits that fall in the relatively modest range estimated by Ramon et al., these are likely useful given the numbers of occasions for which they may be invoked. Ramon et al. point out that "selection *alone* clearly cannot solve the problem of high error rates", but concede that it "can support the development of strategies aiming to improve facial identity processing in applied settings". Their point is that the criteria used to define a super-recogniser may depend on the demands of the real-world job. Specifically, the error rate that is acceptable in one situation may be different from another, and the task that the super-recogniser will need to perform may also be critical if super-recognisers do turn out to differ from each other (Noyes, Hill & O'Toole, 2018). Whilst we have given reasons to question whether existing evidence does point unequivocally to different types of super-recognisers, this is clearly an open and fundamental question.

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