

# Facial features are the key to first impressions

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A new study by researchers in the Department of Psychology at the University of York shows that it is possible to accurately predict first impressions using measurements of physical features in everyday images of faces, such as those found on social media.

When we look at a picture of a face we rapidly form judgements about a person's character, for example whether they are friendly, trustworthy or competent. Even though it is not clear how accurate they are, these first impressions can influence our subsequent behaviour (for example, judgements of competence based on facial images can predict election results). The impressions we create through images of our faces ("avatars" or "selfies") are becoming more and more important in a world where we increasingly get to know one another online rather than in the flesh.

Previous research has shown that many different judgements can be boiled down to three distinct "dimensions": approachability (do they want to help or harm me?), dominance (can they help or harm me?) and youthful-attractiveness (perhaps representing whether they'd be a good romantic partner - or a rival!).

To investigate the basis for these judgements the research team took ordinary photographs from the web and analyzed physical features of the faces to develop a model that could accurately predict first impressions. Each of 1,000 faces was described in terms of 65 different features such as "eye height", "eyebrow width" and so on. By combining these

measures the model could explain more than half of the variation in human raters' social judgements of the same faces.

Reversing the process it was also possible to create new cartoon-like faces that produced predictable first impressions in a new set of judges. These images also illustrate the features that are associated with particular social judgements.

The study, published today in *Proceedings of the National Academy of Sciences (PNAS)*, shows how important faces and specific images of faces can be in creating a favourable or unfavourable first impression. It provides a scientific insight into the processes that underlie these judgements and perhaps into the instinctive expertise of those (such as casting directors, portrait photographers, picture editors and animators) who create and manipulate these impressions professionally.

Richard Vernon, a PhD student who was part of the research team, said: "Showing that even supposedly arbitrary features in a face can influence people's perceptions suggests that careful choice of a photo could make (or break) others' first impressions of you."

Fellow PhD student, Clare Sutherland, said: "We make first impressions of others so intuitively that it seems effortless - I think it's fascinating that we can pin this down with scientific models. I'm now looking at how these first impressions might change depending on different cultural or gender groups of perceivers or faces."

Professor Andy Young, of the Department of Psychology at York, said: "Showing how these first impressions can be captured from very variable [images](#) of faces offers insight into how our brains achieve this seemingly remarkable perceptual feat."

Dr Tom Hartley, who led the research with Professor Young, added: "In

everyday life I am not conscious of the way faces and pictures of [faces](#) are influencing the way I interact with people. Whether in "real life" or online; it feels as if a person's character is something I can just sense. These results show how heavily these impressions are influenced by visual features of the face - it's quite an eye opener!"

**More information:** *Proceedings of the National Academy of Sciences*  
[DOI: 10.1073/pnas.1409860111](https://doi.org/10.1073/pnas.1409860111)

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