

As Dan was noticing [last time](#), the ability to recognize individuals on the basis of faces (and voices) is quite fascinating. The ability to « read » unfamiliar faces is no less interesting, albeit quite independent : prosopagnosics with impairments in perception of facial identity, as well as the rest of us, make judgments about faces being aggressive or friendly (see Todorov 2008 [here](#)).



Alphonse "Neotenic" Capone (1899-1947)

These are intriguing inferences - if only because they are often not very accurate ! Still, they are strong, very quick (as little as 100 ms exposure is enough, as shown for instance here) but they can also be very discriminative, and lead to quite subtle judgements...

They can also turn into a pleasurable or rewarding activity, as when you contemplate portraits of people you don't directly know and will never meet (for instance, in an art gallery, or when you're inquiring into the Facebook of some of your « friends », to see what their « friends » look like).

These inferences are obviously important from an evolutionary point of view: for instance, we have to identify threatening or trustworthy persons, or, as Konrad Lorenz argued, we tend to respond more positively toward babies, and react more generally positively toward infantile features like large eyes, large head and small jaw. These inferences also predict important social outcomes ranging from electoral success to criminal sentencing decisions, where people also tend to be more forgiving toward « baby-faced » criminals. (See for instance Little et al. 2007 [here](#) , and Zebrowitz et al. 1991, [here](#)).

In a recent paper, published in Trends in Cognitive Sciences, called « Understanding Faces Evaluation on Social Dimensions » (see [here](#) - gated version) a Princeton team, lead by Alexander Todorov, tried to address the issue of the psychological aspects of such inferences. Of course, trait inferences, about trustworthiness for instance, have received extensive research attention in both behavioral and fMRI studies. However, research focusing on a single trait dimension is problematic because trait judgments from faces are highly correlated with each other.

« For example, two trait judgments - how caring and how attractive a person is - accounted for 84% of the variance of trustworthiness judgments that predicted the amygdala activation to faces in an fMRI study of implicit face evaluation. Without independent evidence for the primacy of one trait inference over another, it is equally plausible to argue that 'caring' inferences and attractiveness, rather than trustworthiness, drive the response of the amygdala to faces. »

Todorov's group states the problem differently. When we see a certain face, what do we tend to evaluate ? What kind of dimensions do our inferences take into account ? In order to put aside other affective effects, they recommend studying judgments made from emotionally neutral faces and suggest that « faces are automatically evaluated along the dimensions of valence/trustworthiness and power/dominance. These dimensions define a 2D space within which specific social judgments can be represented ».

They go on and show that « the facial cues used for face evaluation along these dimensions indicate that evaluation of emotionally neutral faces is an overgeneralization of adaptive mechanisms for inferring emotional states with their corresponding behavioral intentions and the ability to implement these intentions ».

But does face evaluation result from inferences based on emotional expressions alone? Sometimes it is based on more physical cues (dominance inferences are based on signs of strength, age, weight, etc.) as the authors notice, without elaborating the point. Unless this is taken into account, their

hypothesis won't explain our attitudes toward baby faces, which we find « cute » be they sad, surprised, angry or happy. And what about our judgements about face shapes ? Is it possible to find universal features in inferences from physical traits to the whole range of personality traits drawn from them ? Perhaps there would be « natural » and «social » aspects, as for emotions.

Moreover, as (1) the data are obtained in a « blank » context, when subjects have to no decision to take and no goal to pursue, but just have to « evaluate faces », and as (2) no cross-cultural study is called for, I am a bit sceptical about the methodology. Can one have a « semantic » of facial features, given how much it seems affected by cultural contexts and by specific situations ? In the previously quoted paper, A.C. Little and note that, if faces affect hiring decisions and could influence voting behaviour ...

« changing context from war time to peace time can affect which face receives the most votes (Study 2). Our studies highlight the role of face shape in voting behavior and the role of personal attributions in face perception. We also show that there may be no general characteristics of faces that can win votes, demonstrating that face traits and information about the environment interact in choice of leader. »

Still, it shows what a great field to explore this is.

References

A. Todorov, "Reading trustworthiness in faces without recognising faces", *Cogn.Neuro.*, 25/3, 2008, p. 395-410 ([link](#))

Little, A.C. et al. (2007) « Facial appearance affects voting decisions », *Evol. Hum. Behav.* 28, p. 18-27 ([link](#))

Zebrowitz, L.A. and McDonald, S.M. (1991) « The impact of litigants' babyfacedness and attractiveness on adjudications in small claims courts », *Law Behav.* 15, p. 603-623 ([link](#))