

# Study of 1,000 selfies helps explain how we use them to communicate

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People have used self-portraits to communicate information about themselves for centuries—and digital cameras make it easier to share a self-portrait than ever before. But even though selfies are now almost

ubiquitous, we don't understand how people use them to communicate. So scientists from the University of Bamberg set out to investigate the semantics of selfies.

"Although the term 'selfies' is now celebrating its 21st birthday, and although selfies are known in [art history](#) for nearly 200 years in photography and more than 500 years in paintings, we still lack a clear classification of the different types of selfies," said Tobias Schneider, lead author of the study in *Frontiers in Communication* and Ph.D. student at the Bamberg Graduate School of Affective and Cognitive Sciences.

## **Snapshots of selfhood**

Previous studies have established that people taking a selfie have three main aims: self-expression, documentation, and performance. Some scientists have used accompanying hashtags and other metadata to decipher the meanings people try to convey with selfies, but this doesn't consider the picture itself.

To understand what kinds of meaning people ascribe to different selfies, the researchers asked people to describe their first impressions of a sample of selfies. These associations could then be compiled to work out how different types of selfie are understood by viewers.

"Most research addresses direct visual factors, neglecting associative factors that viewers have in mind when browsing through our selfie-oriented world," said Professor Claus-Christian Carbon, senior author. "Here we used personal reports and associations to describe and categorize selfies in a systematic way."

## **Picturing personalities**

The scientists created their test dataset from a database of selfies called Selfiecity. They used only self-portraits without any text, taken by a mobile camera, using an individual's own hands or a selfie stick. The 1,001 selfies remaining were presented at a standard size, on a plain gray background.

The scientists recruited 132 participants online. To avoid tiring participants, they used an algorithm to select 15 random selfies for each participant to review, ensuring that every selfie was evaluated by roughly the same number of people and that each person saw a variety of selfies. The scientists provided five text boxes per selfie for participants to write down their spontaneous reactions.

Schneider and Carbon processed this data to collapse the respondents' first impressions into 26 categories: for example, 'mood' covered comments the respondents made about the selfie-taker's mood. The scientists then analyzed how frequently these categories appeared in responses, and if they appeared together.

## **Say it with a selfie**

Cluster analysis identified five different clusters of categories, which the authors called "semantic profiles." The largest was named "aesthetics": pictures that showed off style or aesthetic experience. This was very closely followed by "imagination," pictures that led the respondents to imagine where the selfie-taker was or what they were doing, and "trait," images that elicited personality-related terms.

Less popular, but still substantial, were the clusters "state," pictures that looked at mood or atmosphere, and "theory of mind," images that caused the respondents to make assumptions about a selfie-taker's motives or identity.

Each cluster showed a close association of different categories from respondents' first impressions, suggesting the respondents were picking up on [visual language](#) which we use to communicate different aspects of ourselves—whether that's our terrible mood or our great outfit.

"We were quite impressed how often the category 'theory of mind' was expressed, because this is a very sophisticated way of communicating inner feelings and thoughts," said Schneider. "It shows how effective selfies can be in terms of communication."

The scientists pointed out that these semantic profiles may not be expressed or understood in the same way worldwide, so more research is needed.

"Research never ends," said Schneider. "We need more free reports on selfies, more descriptions of how people feel about the depicted persons and scenes, in order to better understand how selfies are used as a compact way of communicating to others."

"We definitely need larger, more diverse, and cross-cultural samples in the future to understand how different groups and cultures use [selfies](#) to express themselves," added Carbon.

**More information:** On the Semantics of Selfies (SoS), *Frontiers in Communication* (2023). [DOI: 10.3389/fcomm.2023.1233100](https://doi.org/10.3389/fcomm.2023.1233100)

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