The future of... wearable technology

From mobile phones to smart watches and glasses, wearable technology isn't just the future. It's happening now. Here we show what wearable technology in general, and phones in particular, say about us and our lives. This research is in its infancy, but given how ubiquitous these devices are expect to see a lot more on this topic in the future.

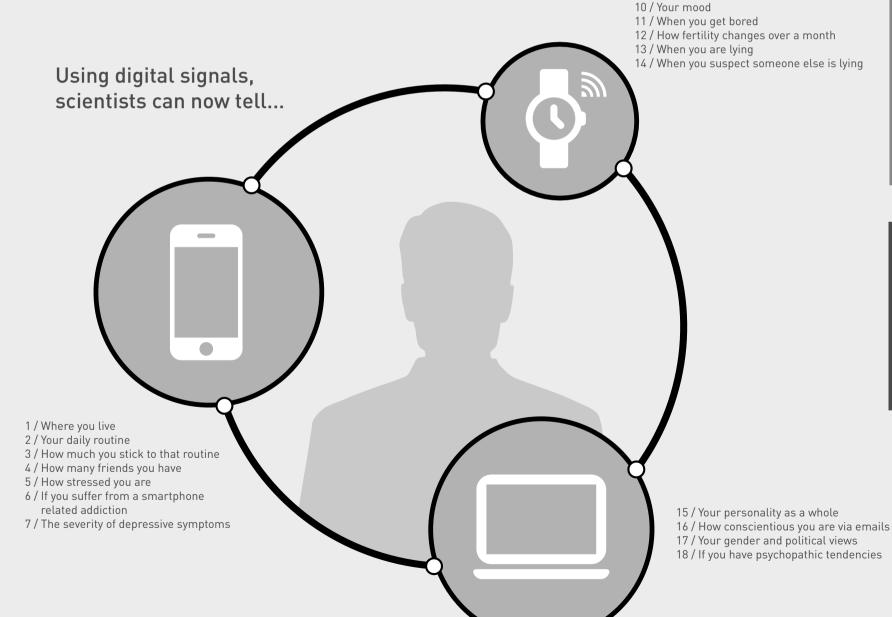## ELICITING INFORMATION FROM DIGITAL TRACES

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LIFE PATTERNS

On average, people check their smartphone 85 times a day. We also spend a significant amount of time interacting with other devices including tablets, laptops, and wearables. Our interactions with these can easily be recorded to better understand routine patterns of everyday behaviour. For example, because people spend most of their life in the same places, it is possible to predict where people are likely to go next based on GPS data from their smartphone. Similarly, an accelerometer placed on the wrist can, over time, build up a remarkably accurate picture of how well you are sleeping.

PERSONALITY

The distinctive words used within emails and social media allow for the accurate prediction of both complex (e.g. conscientiousness) and simple (e.g. age and gender) individual differences. Research has focused on traces of text left behind from social media and email, but call records and the type of applications used on each smartphone have been shown to predict a variety of personal attributes.

Using digital signals, scientists can now tell...

8 / How well you sleep
9 / How fit/lazy you are
10 / Your mood
11 / When you get bored
12 / How fertility changes over a month
13 / When you are lying
14 / When you suspect someone else is lying

1 / Where you live
2 / Your daily routine
3 / How much you stick to that routine
4 / How many friends you have
5 / How stressed you are
6 / If you suffer from a smartphone related addiction
7 / The severity of depressive symptoms

15 / Your personality as a whole
16 / How conscientious you are via emails
17 / Your gender and political views
18 / If you have psychopathic tendencies

EMOTIONS

Mood can be determined from text messages, but also from physiological data recorded by wearable devices. Increased heart rate and levels of sweat emitted from the body can indicate greater levels of physical activity, but the absence of movement may suggest increased levels of stress. Small samples of vocal information can also provide clues to an individual's current mood based on speech variability. Devices can accurately discriminate worry from confidence.

SOCIAL INFLUENCE

Combining digital traces from multiple people can be particularly revealing. The extent to which one person causes another person's behaviour provides a measure of influence, which can indicate a person's position in a social network and who they like and dislike. Tracked over time such measures give insights into team cohesion.

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