

Big Brother is not just watching — He is changing how your brain works

Reviewed by [Steve Fink](#)

Research led by Kiley Seymour, University of Technology Sydney

SYDNEY — Every time you walk down a city street, electronic eyes are watching. From security systems to traffic cameras, surveillance is ubiquitous in modern society. Yet these cameras might be doing more than just recording our movements: according to a new study that peers into the psychology of surveillance, they could be fundamentally altering how our brains process visual information.

While previous research has shown that surveillance cameras can modify our conscious behavior – making us less likely to steal or more inclined to follow rules – a new study published in [Neuroscience of Consciousness](#) suggests that being watched affects something far more fundamental: the unconscious way our brains perceive the world around us.

“We found direct evidence that being [conspicuously monitored](#) via CCTV markedly impacts a hardwired and involuntary function of human sensory perception – the ability to consciously detect a face,” explains Associate Professor Kiley Seymour, lead author of the study, in a statement.

Putting surveillance to the test

The research team at the University of Technology Sydney, led by Seymour, designed an ingenious experiment to test how surveillance affects our unconscious visual processing. They recruited 54 undergraduate students and split them into two groups: one group

completed a visual task while being conspicuously monitored by multiple surveillance cameras, while the control group performed the same task without cameras present.

The monitored group was shown the surveillance setup beforehand, including a live feed of themselves from the adjacent room, and had to sign additional consent forms acknowledging they would be watched.

To ensure participants felt the full weight of surveillance, cameras were positioned to capture their whole body, face, and even their hands as they performed the task.



The visual task itself employed a clever technique called continuous flash suppression (CFS), which temporarily prevents images shown to one eye from reaching conscious awareness while the brain still

processes them unconsciously. Participants viewed different images through each eye: one eye saw rapidly changing colorful patterns, while the other saw faces that were either looking directly at them or away from them.

‘Ancient survival mechanisms’ turn on when being watched

The results were remarkable: “Our surveilled participants became hyper-aware of face stimuli almost a second faster than the control group. This perceptual enhancement also occurred without participants realizing it,” says Seymour. This held true whether the faces were looking directly at them or away, though both groups detected direct-gazing faces more quickly overall.

This heightened awareness appears to tap into ancient survival mechanisms. “It’s a mechanism that evolved for us to detect other agents and potential threats in our environment, such as predators and other humans, and it seems to be enhanced when we’re being watched on CCTV,” Seymour explains.

Importantly, this wasn’t simply due to participants trying harder or being more alert under surveillance. When the researchers ran the same experiment using simple geometric patterns instead of faces, there was no difference between the watched and unwatched groups. The enhancement was specific to social stimuli – faces – suggesting that surveillance taps into fundamental neural circuits evolved for processing social information.

Effects on mental health and consciousness

The findings have particular relevance for mental health. “We see hyper-sensitivity to eye gaze in mental health conditions like psychosis and social anxiety disorder where individuals hold

irrational beliefs or preoccupations with the idea of being watched,” notes Seymour. This suggests that surveillance might interact with these conditions in ways we don’t yet fully understand.



Perhaps most unsettling was the disconnect between participants' conscious experience and their brain's response. "We had a surprising yet unsettling finding that despite participants reporting little concern or preoccupation with being monitored, its effects on basic social processing were marked, highly significant and imperceptible to the participants," Seymour reveals.

These findings arrive at a crucial moment in human history, as we grapple with unprecedented levels of technological surveillance. From CCTV cameras and facial recognition systems to trackable devices and the "Internet of Things," our activities are increasingly monitored and recorded. The study suggests that this constant observation may be affecting us on a deeper level than previously realized, modifying basic perceptual processes that normally operate outside our awareness. The implications extend beyond individual privacy concerns to questions about public mental health and the subtle ways surveillance might be reshaping human cognition and social interaction. As surveillance technology continues to advance, including emerging neurotechnology that could potentially monitor our mental activity, understanding these unconscious effects becomes increasingly crucial.

Like the participants in the study who detected faces faster while being monitored, we might all be unconsciously adapting to our increasingly surveilled world in ways we don't yet fully understand. Big Brother, it seems, isn't just watching us – he's changing how we see the world.

Paper Summary

Methodology

The researchers used a specialized visual technique called continuous flash suppression (CFS) where participants view different images

through each eye using a mirror stereoscope. One eye sees a rapidly changing colorful pattern while the other sees a face that's either looking directly ahead or away. The changing pattern temporarily prevents conscious awareness of the face, but the brain still processes it unconsciously. By measuring how quickly participants become aware of the face's location (left or right of center), researchers can gauge how efficiently their visual system is processing this information. The study compared two groups: one being monitored by multiple cameras (experimental group) and one without cameras (control group).

Results

The watched group detected faces significantly faster than the control group, with almost a full second difference in detection speed. This held true for both direct-gaze and averted-gaze faces, though direct-gaze faces were detected more quickly by both groups. Importantly, when the experiment was repeated using simple geometric patterns instead of faces, there was no difference between groups, showing the effect is specific to social stimuli. The watched group also showed higher accuracy in detecting face locations.

Limitations

The study used a relatively small sample size of undergraduate students, potentially limiting generalizability. The surveillance condition used multiple cameras in an obvious way, which might not perfectly mirror real-world surveillance situations where monitoring is often more subtle. Additionally, the study only examined short-term effects of surveillance, leaving questions about long-term impacts unanswered.

Discussion and Takeaways

This research reveals that surveillance affects not just conscious behavior but also unconscious perceptual processes, specifically in processing social information like faces. The effect appears to operate outside awareness, as participants reported only mild feelings of being watched despite showing significant changes in visual processing. This suggests surveillance might have deeper psychological impacts than previously recognized, with potential implications for public mental health and social interaction in increasingly surveilled societies.

Funding and Disclosures

The paper states that no specific funding was declared for this research, and the authors declared no conflicts of interest. The study was approved by Western Sydney University's Human Ethics Committee.