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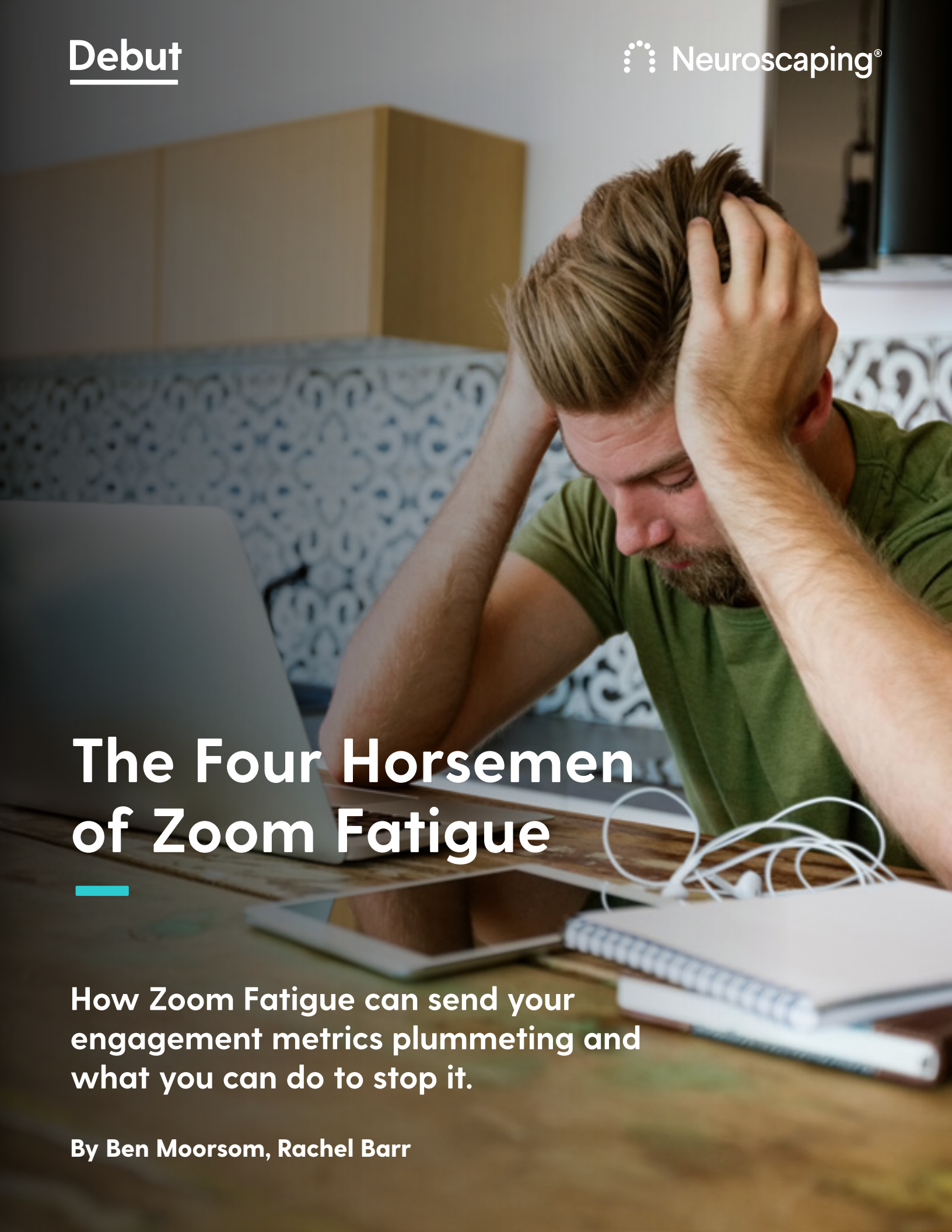
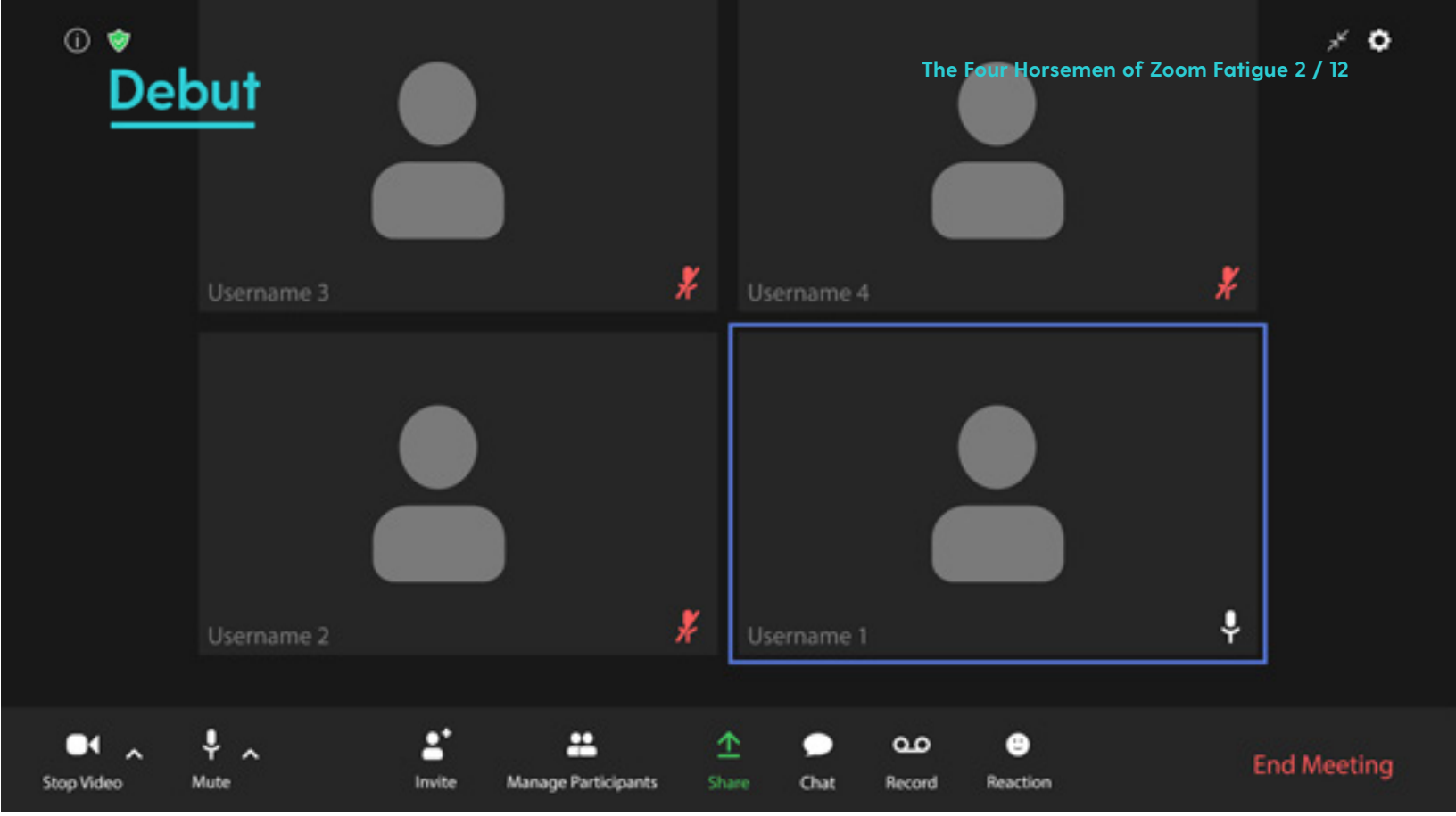


The Four Horsemen of Zoom Fatigue

How Zoom Fatigue can send your engagement metrics plummeting and what you can do to stop it.

By Ben Moorsom, Rachel Barr



Lights, Camera, Action!

The phrase "Zoom fatigue" was quick to catch on in the early days of the pandemic. In the scramble to take our lives online, videoconferencing became a workday staple with some of us spending upwards of 20 hours per week on Zoom [1].

Prompted by this boom, communication Professor, Jeremy Bailenson, examined the psychological consequences of spending hours per day on these platforms.

In the first peer-reviewed article that systematically deconstructs Zoom fatigue from a psychological perspective, Bailenson has taken the medium apart and assessed Zoom on its individual technical aspects [2]. In doing so, he identified the four horsemen of video chat fatigue, outlining how the medium violates the natural rules of human communication.

1. Eye Gaze at Close Distance

Too Close for Comfort

The term 'elevator pitch' was coined to describe a brief, persuasive speech that you use to spark interest in what your organization does. The key feature is that it's short in length since we typically only spend a few seconds riding from one floor to another. But what if you found yourself stuck in an elevator for hours each day, maintaining conversation with strangers or colleagues just a few feet apart?

In an elevator, people are forced to huddle together in close proximity. Normally, we would only display this level of intimacy with close friends or relatives, making the physical parameters of an elevator ride somewhat uncomfortable. As a result, people tend to look down or otherwise avert their gaze in order to minimize eye contact. We decrease one social cue to compensate for a context-driven increase in another.

Early research in nonverbal behavior documented this trade-off between eye gaze and interpersonal distance [3]. These findings were later replicated in a virtual environment to show that people will try to maintain more physical distance when engaging in eye contact but are happy to get a little closer when not [4].

All Eyes On You

So, what does all of this have to do with Zoom fatigue?

A typical laptop set-up with speaker view replicates a face-to-face distance of around 50 cm. That's a close encounter when you consider that anywhere south of 60 cm is regarded as deeply intimate [5]. Of course, you can look away to break the sensation of eye contact, as you might in an elevator ride, but this harmless act is amplified on camera. Gazing down or off-screen creates the impression that you're no longer paying attention or, if you're the speaker, that you aren't particularly confident about what you have to say.

Either way, there is no escaping the constant beam of faces and staring eyes. Research shows being stared at while speaking is stressful, even when speakers see virtual faces instead of real ones [6].

Compare this to a real conference room. It's quite rare for one listener to stare at another listener. The idea of maintaining direct eye contact for the full duration of a meeting is absurd and yet that's exactly what we're living in a typical Zoom call. In fact, that directed eye gaze is maintained by several people at once, a function that is physically impossible to replicate in real world settings. On Zoom, gaze is perceptually realistic, but not socially realistic. Professor Bailenson calculated that the amount of eye gaze in a videoconference is more than eight times higher than a real life meeting [2].

Solution: Taking Distance

With the recent success and increased reliance on videoconferencing platforms, it's hard to say whether the classic interface will ever undergo the major makeover it would need to address this problem. But there are steps we can take to reduce the stress of excess eye gaze.

Taking Zoom out of the full-screen option and reducing the size of the Zoom window relative to the monitor will minimize face size. This would replicate the feeling of taking a few good steps backward in a face-to-face interaction.

Using an external keyboard can be another great way to create perceived space. This simple strategy creates the illusion of a personal space bubble between you and the grid of faces.

2. Cognitive Overload

Too Much and Not the Mood

One of the remarkable aspects of human communication is how nonverbal behavior is simultaneously effortless and incredibly complex [7]. Gathered around a dinner table with friends, or even strangers, our non-verbal communication flows naturally, to the point where we are rarely consciously attending to our own gestures.

On Zoom, nonverbal behavior remains complex, but users need to work harder to send and receive signals. As disembodied faces with arms, we are forced to consciously monitor nonverbal behavior and to send cues to others that are intentional and exaggerated. We don't have to worry about centering ourselves in someone's field of view in a real life interaction, for example, but regularly attend to our position on camera throughout a Zoom call. Users also find themselves nodding in an overstated way for a few extra seconds to signal agreement or looking directly into the camera (as opposed to the faces on the screen) to try and make direct eye contact when speaking. This constant monitoring of behavior adds up.

Even the way we vocalize on video takes effort. Researchers compared a face-to-face interaction to videoconferencing and demonstrated that people speak 15% louder when interacting on video [8]. Imagine the extra energy it takes to raise your voice for hours each day.

Aside from paying additional attention to the signals we send, we also have to work harder to interpret incoming social cues. For example, in a face-to-face meeting, a quick, sidelong glance where one person darts their eyes to another has a social meaning. In Zoom, a user might see a pattern on their grid where it seems like one person glanced at another. However, that's not what actually happened, since people often don't have the same grids. Even if the grids were kept constant, it is far more likely the glancing person just got a calendar reminder on their screen or a chat message. Zoom users face this

perceptual disconnect often.

Users are constantly receiving nonverbal cues that would have a specific meaning in a face-to-face context but have different meanings on Zoom. While of course people do adapt to media over time [9], it is often difficult to overcome automatic reactions to nonverbal cues.

The cues we receive in Zoom are already limited, as cameras are focused toward heads. One of the more celebrated aspects of Zoom meetings is freedom from worrying about how you're dressed below the waist. But this small advantage for comfort comes at a great cost. We lose a lot of nonverbal data and, as a result, the influences of facial expressions, eye gaze, or hand gestures are amplified. When there are fewer communication cues presented, those particular cues have a larger impact than when there are many cues available [10]. That means that delicate interactions that require subtlety are much harder to handle. Receiving bad news or criticism, for example, can suddenly feel more intense.

In essence, we've taken one of the most natural things in the world – an in-person conversation – and transformed it into something that involves a lot of thought. That adds a lot of extra cognitive load as you use mental energy even for basic communication.

Solution: Turn the Other Cheek

During long stretches of meetings, give yourself an "audio only" break.

This isn't just turning off your camera to take a break from having to be nonverbally active, but also turning your body away from the screen so that for a few minutes you are not smothered with gestures that are perceptually realistic but socially meaningless.

3. All Day Mirror

Mirror, Mirror

Imagine pottering around the office on a normal work day. You have a few meetings booked into your calendar and some pressing deadlines to meet. Nothing out of the ordinary. Except, instead of ploughing through your tasks alone, an assistant is with you -- and holding up a handheld mirror to your every move. Imagine that for every piece of work you do and every conversation you have, the assistant makes sure you see your own face in that mirror at all times. The conversation with your colleague suddenly feels quite

glancing down at your notes is not the same either since you've noticed the funny thing that happens with your neck skin when you tilt your head. It sounds like some extravagant torture from Greek Mythology, but in essence this is the reality of a Zoom call.

Of all the strange design decisions from Zoom, this one looms large and leaves us hypnotized by our own reflection.

Seeing is Believing

A greater degree of self-awareness can make us conscious of what we think, say and do. Self-awareness tends to originate somewhere in the mind. But the other way of making ourselves self-aware is by literally looking at ourselves in the mirror. The effect of our mirror image has been studied for decades. Pioneering work in the 1970's demonstrated that people are more likely to evaluate themselves when they see themselves [11]. Doing so causes us to reflect on our behavior and act in more socially desirable ways [12-13]. While prosocial behavior is great, all this self-evaluation can be stressful.

Mirror image viewing has been associated with negative emotions and lower self-esteem [14]. This effect isn't limited to the traditional analog mirror; a handful of studies also examined the effect of seeing oneself via real-time video feed finding similar distress outcomes [15-16]. However, these studies are typically short and show participants a mirror image for less than an hour. What happens when we're exposed to our mirror image for hours every day?

More recent work demonstrated that video-use is associated with body image disturbance. Over one-third of participants identified new appearance concerns while on video call and reported greater interest in obtaining future beauty and cosmetic procedures [17]. It seems that the longer we spend gazing at ourselves, the more we find fault with the reflection staring back at us.

Solution: Out of Sight, Out of Mind

Bailenson calls for a major design overhaul to change the default practice of beaming your own video to your screen, when it only needs to be sent to others. In the meantime, users should use the "hide self-view" button, which you can access by right-clicking your own image. If need be, take a few seconds at the beginning of a call to orient your face so it's properly framed then close that function for the remaining time.

4. Reduced Mobility

Freeze! Don't Move

During face-to-face meetings, people move. They stand up, pace, and stretch, they doodle on a notepad, get up to use a chalkboard, even walk over to the water cooler to refill their glass. On a Zoom call, people are locked within the camera's narrow field of view. Worse still, because Zoom calls are typically conducted using a computer, people tend to stay close enough to reach the keyboard, which means their faces are around half a meter away from the screen. This limits movement in ways that are not natural.

In essence, users are stuck in a very small physical cone, which usually means sitting down and staring straight ahead.

Movers and Shakers

There's a growing body of research that says when people are moving, they're performing better cognitively [18]. For example, people who are walking, even when it is indoors, come up with more creative ideas than people who are sitting [19]. Learning outcomes also appear to benefit from locomotion. One study demonstrated that when children are required to gesture with their hands while learning math, they can learn more material at a quicker pace compared to children who sit still [20].

While Zoom doesn't technically prevent gestures during the speech, being forced to sit in view of the camera certainly tampers down movement.

We don't have this problem in a conventional audio call. We assume that our conversational partner is devoting 100% of their attention to us. But meanwhile, throughout a 30-min phone call, we do all sorts of activities. We might stretch, water the plants, or even thoroughly clean a neglected corner of the kitchen all the while maintaining the idea that the other person is a dutifully tunnel-visioned listener.

Zoom shatters this illusion. If someone decides to stand up and leave the field of view, it feels as though they've stopped paying attention entirely. During the early stages of videoconferencing, academics argued that this would be the death of the platform [21]. People like to do minor physical activities while they talk and listen. And with good reason. A recent study found that even a short break of walking between bouts of sitting can dramatically improve mood and energy levels [22].

Solution: Room to Breathe

Thinking more carefully about how we structure our home office spaces can help to mitigate the cage effect of videoconferencing. Even small changes to camera positioning or the addition of a wireless keyboard can help create distance or flexibility. For some, it might be possible to install a standing desk, or position your camera in front of a home treadmill or exercise bike.

Communication Professor, Jeremy Bailenson, suggests we set new social conventions for Zoom meetings. We should normalize frequent breaks, like turning off video or taking a moment to stand up and stretch so users can enjoy a brief nonverbal rest.

The Path Forward

We shouldn't blame Zoom for making a great product that delivers so well that we're now using it for hours each day. But we should evaluate our approach to this platform to find new and exciting ways to interact with videoconferencing technology that are more conducive to our natural communication instincts

Eye Gaze at Close Distance

- Take Zoom out of the full-screen option and reduce the size of the Zoom window relative to the monitor.

- Using an external keyboard.

Cognitive Overload

- During long stretches of meetings, give yourself an "audio only" break.

- Turn your body away from the screen from time to time.

- Take traditional phone calls when possible.

All Day Mirror

- Users should use the "hide self-view" button.

Reduced Mobility

- Position the camera further away.

- Install a standing desk, or position your camera in front of a home treadmill.

- Take frequent breaks, like turning off video or taking a moment to stand up and stretch.

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About Ben Moorsom

Ben is the creator of Neuroscaping®. A behavioral communciations practice. Since founding the Debut Group in 1997, Ben has made it his mission to challenge and disrupt ineffective conventions of business communications, pioneering new approaches that strengthen brands internally, engage people more effectively and deeply capture their attention. By applying advances from psychology and neuroscience, Ben and his team turn audiences into active participants. They use Neuroscaping methodolgy to cut through the noise and competition at the gateway to the human mind, placing business messages near the front of the line. Ben is a frequent keynote speaker and co-conspirator at global conferences on communication thought leadership.

About Rachel Barr

Rachel is a PhD Researcher at Université Laval in Quebec, Canada. She studies the electrical activity of the brain and how it shapes the dynamic neural circuits and high-order networks that encode memories. She holds a master's degree in Molecular Neuroscience from the University of Bristol, UK, and has helped leading companies apply research to improve their impact both internally and with their customers.

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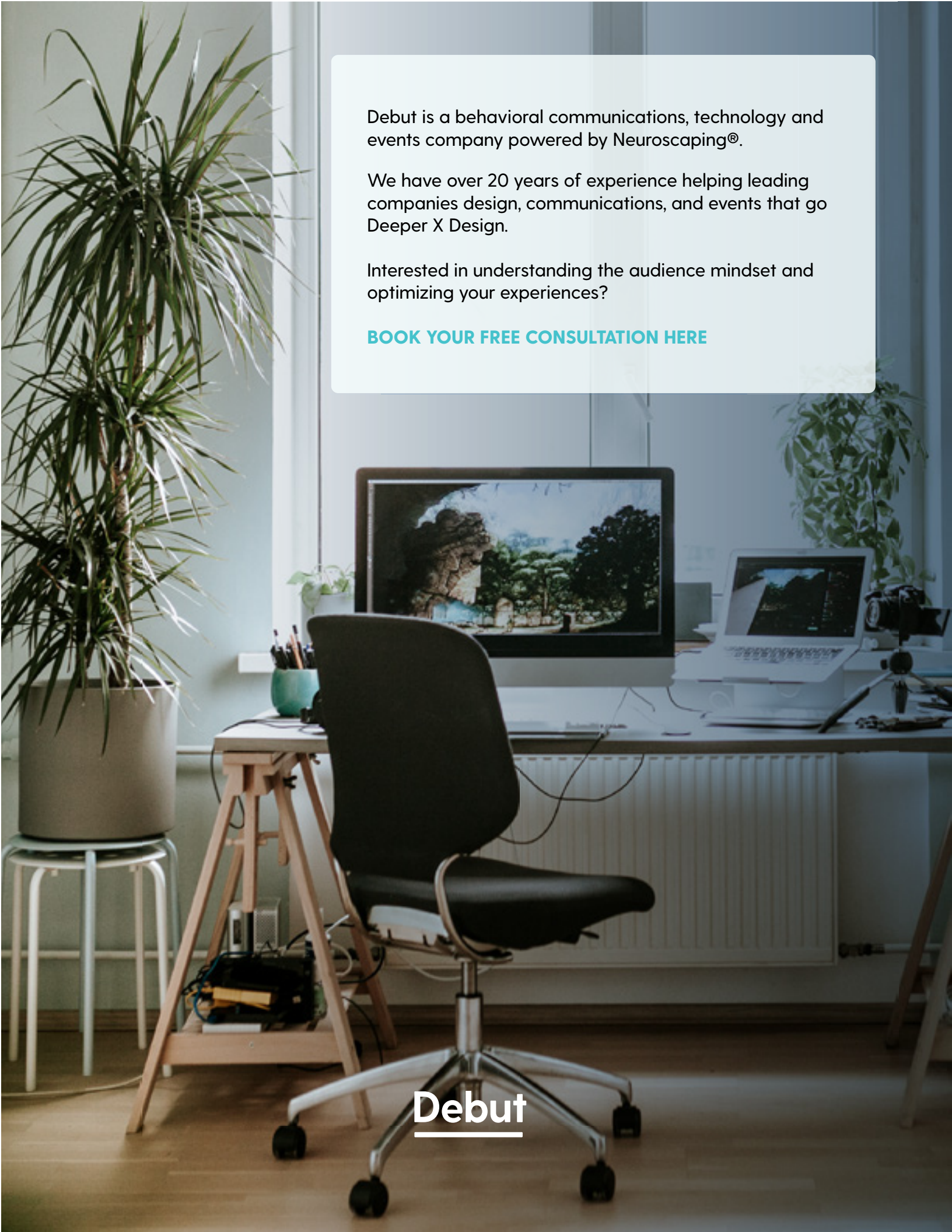

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