The veracity continuum

By Judith Donath

Millions of people have joined virtual worlds such as *Second Life* and *there.com,* creating avatars in which to socialize, explore, and conduct business. What makes virtual worlds so compelling, even in their current primitive form, is the presence of other people. We are inherently social creatures, deeply attuned to the nuances of others' actions and expressions – even when the other is an avatar.

But current avatars have only limited expressiveness. They can be moved to stand next to each other to talk, but often stare blankly into space, inert and unengaged. With virtual worlds poised to become a major hub of social and business activity, an important focus of virtual environments research is on making avatars more smoothly expressive, able to appropriately make eye contact, smile, look interested or bored, and so on.

But giving avatars this kind of expressiveness raises complex questions about how we present ourselves in virtual worlds. We will soon be able to choose avatars whose behaviors fall across a spectrum of "veracity" – the span of honesty and precision of their expressiveness. Options will range from avatars with gracious but unreliable scripted performances to avatars that convey extraordinarily candid interior revelations of unprecedented intimacy and invasiveness. We will need to make careful choices about the type of expressivity we want in our avatars.

In face-to-face interactions, our expressions signal our thoughts and feelings. Gaze indicates where our attention lies, an infuriated expression means we are angry. Our expressions are reliable enough to be communicative, but we can also edit and control them: we feign attentiveness when bored and maintain an expressionless poker face during intense negotiations. Expressions that do not match our underlying feelings are essential not only for deception but also for privacy and social graciousness.

In the not-too-distant future, we will choose the veracity of our avatars depending on our needs in each interaction, much as we choose our communication channels today – video conference, phone, email, IM --based on our need for immediacy, accuracy, and control of the message. Avatar control can be expected to take one of three broad forms on what I can the "veracity continuum."

In the *idealized form*, programmatic control gives the avatars consistent and detailed gestures and expressions that are convincing, but generated by the avatar, not the user. You will be able to buy your preferred affective style, outfitting your

avatar with "Brisk and Businesslike", "Elegantly European", "Rude and Rebellious" – personality programs that will guide your avatar to make the appropriate in-character gestures and expressions. This form will be suited for performative situations, such as online parties, product demos, games, and conventions.

Most current avatars are of the r*epresentative form*. They display expressions based on user commands, entered via keyboard or picked from a menu. Experimental systems that use machine vision or gesture sensing to integrate avatar actions with the user's actual expressions and gestures are also of the representative form. When users laugh, or look puzzled or bored, so do their avatars. The representative form, well suited for more personal communication, provides users the same control over their avatars' expressiveness as over their own: they can reveal quite a bit of inner thought, but also edit it.

At the extreme end of the spectrum are technologies that may make it possible for avatars to represent your interior thoughts with even greater veracity than you do yourself in ordinary conversation. These range from simple non-invasive technologies such as galvanic skin response (GSR), which gauges your emotional response by measuring how sweaty your palms are, to future technologies that will sense the activity in your brain to deduce what you are thinking and how you are feeling.

These technologies might be desirable for highly cooperative tasks, where intense coordination is needed. Teams could use them to quickly assess when members had doubts or were excited about a new direction. The deep intimacy of such communication might make working together in a virtual space seem closer than being physically together. Or, these technologies might be used in more competitive situations. In a dare of dueling minds one party in a negotiation might ratchet up the intensity by suggesting a move to mind-reading helmets. Would saying no risk appearing to be lying or worried about revealing anxieties?

Although mind-reading helmets are far from commercially available today, it is not too soon to be thinking deeply about how to make these choices. When do we want a solipsistic wonderland in which everyone appears beautiful and poised – where we gain little insight about our fellow humans, but greatly enjoy their company? When do we want interactions in which heretofore private responses become nakedly public utterances? And when do we choose the extraordinary and delicate balance of revelation and control that characterizes the *representative form* – and our everyday face to face interactions?