

The problem with VR gear is that it is invasive; it intrudes on you and your personal space, demanding that you perform a fashion ritual to make it work

by Harvey P. Newquist

A Day in the Life of a VR User

Scen es from a typical day in the virtual world of tomorrow: You wake up and attend to your daily bathroom rituals, which unfortunately will never be replaced by any virtual reality process. Having completed your toilet, you dress in your most comfortable clothes and have a bite of breakfast—perhaps a glass of Tang or soylent green or some other "space-age" food substitute. After breakfast, then as now, it's time for work. Being the world of tomorrow, however, you're probably working out of your house and telecommunicating to work. The best way to do that, at least in the eyes of those who believe in shared realities, is virtual reality.

Thus, after your real world morning ceremonies are completed, it's time to get immersed in your virtual world. You start by strapping on your VR gear: two gloves attached to a computer workstation by cables and fiber optics, a headset that entraps your head like some medieval helmet, a motion sensor that straps to your waist or chest like some fanny pack or electronic cardigan, and

maybe a few peripherals like a treadmill or hydraulic platform. You've got Velcro straps here and there, a few buckles, a couple of zippers, and several plugs and sockets that all need to be adjusted (good thing, too: depending on how well you're sticking to that diet, even those datagloves could feel a little snug if they didn't have Velcro side vents). By the time you put on all your gear and make all the proper calibrations, nearly an hour has passed and you're still not even logged into the environment you're planning to work in today. It's like getting ready for a joust, only you don't have servants and footmen to help you get dressed. Still, the joys and benefits of VR are worth the trouble and inconvenience, so you gladly perform this ritual every day.

Uh, I don't think so.

This is way too much work. The problem with VR gear is that it is invasive. In our popular depiction and selling of the technology, it intrudes on you and your personal space, demanding that you perform a fashion ritual to make it work. It's like going

scuba diving-you can't go into the water until you've suited up and are all prepared for what lurks under the surface. Despite the comparison, we're not talking about going out into the ocean; hell, we're not even talking about leaving your house. Contrary to the popular social platitude that laments being "all dressed up with no place to go," virtual reality requires that you get dressed up before you get to go anywhere at all.

Obviously, entering the computer domain of VR is not as easy as sitting down at a keyboard. With a keyboard, you approach it, sit down at it, and then have your way with it. It doesn't move; it doesn't attach; it doesn't have to be affixed, fastened, latched, or climbed into. The keyboard is just there, and it doesn't require any more physical- or emotional-attachment than a toaster.

The VR interface is the second most important factor that will affect VR's general acceptance in the years to come. The most important factor- VR's lack of photo-realism-has been discussed frequently in the past, so I'll not rehash that debate here. While much focus has been given the visual, aural, and sensory aspect of VR, very little attention has been paid to the downside of requiring users to climb into a 21st-century monkey suit to make use of the technology.

The clumsiness of the VR interface has been overlooked thus far because it is still something of a novelty. Since only a small fragment of the world's population has ever experienced VR, most people would consider it a thrill as well as a cool personal undertaking to suit up in any sort of VR gear. This capacity to overlook technical shortcomings was most recently exemplified by the initial users of IBM's PC more than a decade ago. With their 128K of RAM and their 360K floppy disks (sorry, no hard drives), these users were in technoheaven, the envy of all those poor pen pushers circa 1981 who couldn't afford such "powerful" machines.

Today, you can't even give away computers with the meager capabilities of the first generation of PCs- just ask all those early users who can't find anyone to take them off their hands. Everybody knows what PCs are capable of, and even the banjo guy in *Deliverance* probably understands the importance of having storage measured in megabytes and gigabytes on a PC. For PCs as well as other technoproducts, the minimum acceptable standard keeps going up. Old ways and means become unacceptable as technology improves and people becomes exposed to the latest forms of that technology.

Datagloves and headsets and stereo goggles are VR's 128K machines. Right now, they're all we've got, but pretty soon they won't be enough. Surprisingly, processing power and speed won't be the big drawback this time; comfort will. VR will be the first

advanced technology that will have to make concessions to the human desire for comfort, convenience, and-I hate to say it-fashion. Why does everyone in the industrialized world own a pair of jeans and a T-shirt? Comfort and convenience. Ties and suits and business skirts are a pain: We wear them because societal conventions demand it. VR gear is more like business attire than comfortable clothing, and that immediately puts it at a disadvantage in gaining popularity amongst those of us who get dressed up only when we are forced into it.

Other forms of popular computing, especially video games, are comfortable and convenient, like jeans and T-shirts. In these situations, a joystick or a mouse is all that you need to get up and running. Like the keyboard, these devices don't demand much from you in terms of a relationship or learning curve. That is part of their popularity-anybody can operate them at a moment's notice or walk away from them just as quickly. VR needs to provide this exact same level of convenience to propagate and make data access simpler. As it stands now-in a world with too little time to do the things we really want to do- getting dressed up in a VR suit sounds more like torture than any kind of desirable experience.

Believe it or not, the issue of health comes into this as well, although it is not as pressing as the concern over ergonomics. The health problem here is the result of sharing equipment. As everyone from Hillary Clinton to the Center for Disease Control begins to worry about what kind of communicable diseases you can get just by walking down the street, people are going to get a little bit more finicky about what they strap onto their bodies, especially if a bunch of people were wearing the same article of clothing or apparatus before they were. I'm referring specifically to VR games in arcades where multiple users are all (or will be) outfitted, one after another, with the same headsets and gloves and whatnot. Not to sound paranoid, but when Lysol commercials advocate the spraying of public telephones before use, then there's a certain germ phobia already in place out there. Perhaps we need a disposable part of the interface that eliminates that whole problem of sharing "wearable technology."

Getting dressed up, sharing greasy headsets-it all sounds pretty grim, doesn't it? But it's an aspect of VR technology so obvious that we don't even give it a second thought, like the noses on our faces. How do we make this stuff more palatable to the world at large? In other words, how do we make VR more practical?

At this stage, the options are few, since relatively few companies have dared to venture off the path as established by VPL and

other early VR developers. Fake Space's BOO 1 is a good attempt to make VR a walk-up and walkaway experience, but this product is the exception rather than the rule.

Maybe we're thinking too small. Maybe we've got to think bigger than self-containment, at least for the workaday world or the entertainment world (certain other activities will require personal body suits, if you know what I mean, and I think that you do). After all, 360° movie theaters can provide viewers with a virtual reality experience, especially as it relates to movement and visual continuity. This form of VR is passive, but effects on users/viewers are similar to those that occur in VR body suits and headsets.

Let's bring the concept of this 360° theater into the home, or even the office. What about creating rooms where one entire wall is a virtual world? AT&T had a great commercial several years back where video walls acted almost as glass panels between two linked realities, such as a guy in his hotel room on one side and his kid's bedroom on the other. The virtual wall served to create an environment where it seemed that people in distant geographic locations were separated merely by a pane of glass. The same effect was used in the movie *Total Recall*, where a not-yet-mediaworthy Sharon Stone played virtual tennis inside her apartment. The cumbersome VR togs of today might not be necessary if the walls of our buildings can create life-size video and provide a "window on the world" where computer-generated reality appears to be as real as looking into an aquarium or out of the windows of an office building.

In an effort to be even more practical, we can scale this idea down a bit. Those video arcade games that allow you to sit down inside a semi-enclosed capsule (first popularized by *Battle Zone* and now a staple of auto race simulations) offer a convenient way to get in and get out of alternate realities at your leisure without all the attendant strapping and snapping and latching. Extend this concept to a desk, where a wide screen is enclosed by panels that block off peripheral vision. It may sound confining, but such an arrangement is no more confining than some of the veal pens that pass for office cubicles these days. The virtual desk could have a mouse or joystick or keyboard or some touch receptor that allows the user to get right down to business as soon as he or she plops down in a chair. 'o muss, no fuss, and the virtual world is as immediately accessible as a word processing program. It would be perfect for conferencing, for viewing data worlds, or for that quick game break between meetings. The virtual desk would not give any sense of forward movement, unfortunately, and that effect would depend on visual cues. But it could act as a

virtual vehicle or monitor unit in the same way that flight simulators do.

Neither the virtual wall nor the virtual desk perfectly addresses all possible noninvasive scenarios, but once you think about it, they cover a lot of those possibilities. Other environments, especially those that require people to walk around something such as a new product, will inevitably require more mobility than that offered by a virtual desk or a virtual wall. In cases where mobility is necessary, headsets and gloves may be the only possible VR alternative, barring some dramatic breakthrough in tactile holography (although the likelihood of this is about the same as threading a camel through the eye of a needle).

If we are to use headsets, then they must be convenient and comfortable. Darth Vader hoods simply will not do once their initial appeal has worn off. VR headsets and goggles can't be any more imposing or invasive than a pair of oversized Ray-Bans or stereo headphones. People won't be willing to encase their heads in a device that can't be removed instantaneously; they'll either get claustrophobic or feel like they're playing "pin the tail on the donkey" and won't have the ability to check out their immediate real world surroundings. I can see it now: Jane is playing virtual Scrabble with her sister, who lives in Kuala Lumpur. Jane hears a noise in the house and thinks that

her new recipe for broiling soylent green may have caught fire. Unfortunately, she's hardwired to her VR workstation. By the time she unravels herself from the iron maiden-esque contraption that serves as her entrance into the virtual world, her real kitchen is engulfed in flames. I may be overstating the case here, but you get the gist. Using VR from the perspective of a restraining mechanism is not a pleasant thought.

VR is a newborn on the maturation scale of technologies, and thus we are more than happy to have whatever we can get at this point. But like all infants, VR will grow up, and we have to try and guide it appropriately through the coming years of adolescence. If we just accept that the current generation of VR gear is suitable for the future, then we are missing our opportunity to provide parental influence. Like the original pes, we must expect more from infants if they are to rise to their full potential. Otherwise, what we might today think of as being cute little VR personality quirks today could turn out to be dangerous personality disorders in the future. We want VR to grow up to be warm and friendly like Ward Cleaver. What we might get if we don't give more thought to the VR interface is Ted Bundy. ☆

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