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CIFR- On Wearable Technology, Transhumanism and Perspective

Modern technological evolution is rapid and the traditional distinction between human and machine is undergoing reconsideration. At the centre of this exploration lies the concept of non-duality a philosophical stance that challenges the dichotomy between self and other, mind and matter, human and technology. Non-duality posits that these distinctions are, in many ways, constructs of our conditioned perception rather than absolute truths. It is a perspective that is logically sound, however so fundamental to the human experience that we as people often forget the weight of it's truth as it is so obvious in every waking moment. The natural response for any living entity to this truth is duality, which as an opposite encourages the development of the ego (Hopwood, Jung, 2023). In many Eastern traditions, non-duality is the recognition that the boundaries we perceive are fluid and often illusory, a perspective that invites us to see the interconnectedness of all things (Maharaj, Mehta, 2014).

This approach is particularly vital when we examine wearable technology, a field that increasingly redefines what it means to be an extension of the body. Wearable devices, whether they manifest as smart clothing, augmentative prosthetics, or even more invasive implants, are not merely tools; they are becoming integrated modules that blur the lines between our natural born biological systems and artificial enhancements. As these devices interface and integrate ever more intimately with our sensory cortex, they begin to function as true sensory substitutions, challenging the rigid boundaries that have traditionally presented our bodily and worldly identity.

The psychological and societal implications of this shift are significant. From a personal standpoint, as wearable technology becomes more integrated, many individuals may possibly experience a reconfiguration of their body image. A phenomenon already observed in prosthetics and phantom limb experiences (Deegan, 1975). This sensory reconditioning can redefine self-perception and, consequently, affect one's sense of autonomy and identity. On a

societal level, the integration of augmentative technology into the mainstream raises ethical questions about conformity, equity, and the preservation of what we consider intrinsically human. For example, if technological enhancements become widespread, they may inadvertently foster a new hierarchy where those without access to such augmentations are marginalised—a modern reflection of the age-old human desire to avoid being cast as the ‘other.’

By employing a non-dual lens, we can better appreciate how wearable technology dissolves the traditional duality of body versus machine. This perspective not only helps us understand the technical and sensory benefits of these innovations but also guides us in grappling with the ethical and philosophical challenges they present. It directs us to consider how we might harness these advancements to enhance human experience without compromising the very qualities that define our humanity and keeping the resulting products grounded and compatible with the human experience and societal flow. Ultimately, non-duality offers a holistic framework- a means of perceiving a future where the integration of technology is not an intrusion upon our nature but rather an evolution of it.

In the sections that follow, presented are the intersections of sensory conditioning, prosthetic augmentation, and advanced augmented technology. By examining these phenomena through the lens of non-duality, we can observe the ways in which technology can reconfigure our sensory experiences, challenges the traditional notions of the self, and the reshaping of our social landscape.

We are programmed - both consciously and unconsciously to perceive reality as dualistic from birth as a natural response to the polarity between self and other from cascading pattern of every ancestor. Primarily through audiovisual channels, though every sense plays its part. In an era defined by rapid technological integration into the human experience, wearable devices are no longer mere accessories; they are evolving into sensory substitutions that redefine where our bodies end and technology begins. This depends on definitions. Examining how such integrations—from smart clothing to body implants—challenge traditional notions of bodily boundaries, evoke phantom sensory experiences, raise transhumanist questions about the future of human identity, by also contrasting Western perceptions with Eastern philosophies and its implications on society.

From the moment we are born, our senses are calibrated to distinguish between the self and the other. This conditioning forms the foundation of our identity of self, with clear perceived boundaries that govern how one interacts with the world. The audiovisual dominance in this conditioning is well understood, yet every sense contributes to the formation of our internal body schema. From this perspective, the introduction of wearable technology that can mimic or substitute sensory input challenges the rigid boundaries we have long accepted. As these devices integrate ever more closely with the human sensory cortex, they blur the line between innate perception and technological mediation, as the human brain is a biocomputer.

“Each one of us is potentially Mind at Large. But in so far as we are animals, our business is at all costs to survive. To make biological survival possible, Mind at Large has to be funnelled through the reducing valve of the brain and nervous system.”

(Huxley, 1954)

The “reducing valve of the brain and nervous system” is destructive for consciousness, but necessary to survive as an individual. This is the conditioning of duality, whereas full consciousness (unachievable by a person) is non-duality.

The nature of prescribing duality to a newborn is not separate from standard maternal care such as name calling, feeding, “peekaboo” and separation when sleeping. This is the standard western model of deeply ingraining duality into the mind of the young, it is not inherent in many non-western traditional upbringings. As the caregivers teach a child how to eat, what their name is and the caregiver’s own name the newborn’s brain is conditioned with beliefs and instructions they are only now - an individual. Since before the birth and severing of umbilical chord they are no separate from the the mother’s biology. This is why the brain can be considered a “filter” of consciousness, as it’s programming is destructive in nature.

A child learning the physical boundaries of their body is no exception to this conditioning/filtering. This means that the more closely technology integrates into the physical body and mental landscape of a human- the more the brain is deprogrammed of its deep dualistic comfort. The implications of such deep rewiring are psychotic through the lens of modern medicine. The illusion of separation is unkind to non-dualism as it conflicts with itself. For many, this process of adaptation will be unconscious, and many adapt to this sort of

reprogramming with only minor issues. However, considering the rapid advancement in the integration of new technologies—such as Neuralink, a brain-computer interface designed to “achieve a symbiosis with artificial intelligence” by implanting electrodes into the brain for direct communication between neural activity and digital systems (Musk, 2019)- extra consideration must be made of the deprogramming of prescribed perception and identity.

Prosthetics and the experience of phantom limbs provide a clear example of how technology and biology can merge to extend sensory boundaries. For individuals with prosthetic limbs, the sensation of touch or movement can persist even in the absence of a physical limb—a testament to the brain’s incredible capacity for adaptation. This phenomenon demonstrates that the integration of technology can reshape our sensory experiences, creating a fluid boundary between what is naturally embodied and what is technologically integrated. Modern wearable devices every-increasingly operate on a similar principle: that they interface more intimately with our sensory cortex using deeper HCI and UX research. They offer an expanded palette of sensations that strongly interfere with our bodily experience. The implications of such sensory expansion are profound, prompting humans to consider not only the benefits of enhanced capabilities but also the potential psychological and social consequences of an ever-blurring line between human and the machine of other.

The promise of wearable technology to expand our sensory capabilities and enhance human performance is undeniably compelling. However, as we push the boundaries of what it means to be human, we must also lend attention to warnings from our past. Ted Kaczynski once remarked:

“The Industrial Revolution and its consequences have been a disaster for the human race.”

(Kaczynski, 2005)

While his approach and ideology are extreme, his observation questions whether our relentless pursuit of technological advancement and then sensory integration might inadvertently compromise the essence of our humanity.

Beyond traditional prosthetics, a new frontier can envision a future where the human body is not confined to its natural limits but is augmented with additional limbs and interfaces that embed hardware compatibility with external machines to the human (Imagine desktop computers, networks and tools). In speculative narratives and emerging research alike,

augmented prosthetics evolve from mere replacements to enhancements that grant the user capabilities beyond the standard human range of expression: Extra arms that enable multitasking in ways once only imagined in science fiction, or direct neural interfaces that allow individuals to control external devices as effortlessly as lifting a finger. These conceptual upgrades highlight the idea that technology can be woven into our very fabric of consciousness, effectively transforming us into hybrid entities whose capabilities extend into realms that challenge the traditional definitions of bodily integrity within the scope of a human being birthed via traditional means, as the birth process is likely to play a part in the installation of such augments.

Research on phantom limb experiences and sensory substitution devices further highlight the brain's ability to be adaptable to new inputs. As Ramachandran observed in his work, 'The existence of phantom limbs is compelling evidence that the brain continuously constructs a body image, even in the absence of sensory input from missing limbs' (Ramachandran, 2012). This adaptability is clearly demonstrated by amputees who, despite the loss of a limb, continue to experience sensations: often in both pain and familiarity. Such findings suggest that the brain's neural maps remain flexible and can reassign sensory processing functions, similarly to how beliefs and basic conditioning are programmed into a newborn, albeit with more work, this is up for debate.

Speculative advancements in prosthetics propose not just replacements but augmented enhancements, consider additional limbs or direct hardware interfaces with external machines, that push beyond traditional boundaries of the human form. This raises ethical and philosophical questions. As technology blurs the lines between the natural and the augmented, the concept of duality—separating the self from external objects—begins to dissolve. If our sensory experience and bodily integrity can be expanded at will, then what where does a human begin and end? Is the integration of extra limbs or enhanced sensory inputs a celebration of human potential and evolution, or does it risk breaking down the gift of our biology?

In contemplating this trajectory, as a species we are urged to balance the pace of enhancing capabilities with a critical evaluation of the psychological and social consequences each step of the way. As technology continues to evolve, our definitions of self and

community must also adapt, challenging long-held notions of where the human body begins and ends.

Our brains are capable of reinterpreting non-traditional sensory channels, paving the way for innovations in wearable technology that offer novel and customisable sensory experiences, with high potential for medical use. It would be breaking the natural flow of progression to stop it.

The spectrum of wearable technology ranges from smart textiles that subtly interact with our sensory systems, to deeply integrated implants that become nearly indistinguishable from our natural bodies using nanotech at a microscopic level (electronics and chemistry). At one end, clothing embedded with sensors or actuators can provide haptic feedback as an example of modern use. At the other, implants that interface directly with neural circuits show us a future where technology is not just worn but is an integral component of the body's sensory landscape. The closer these devices integrate into our sensory cortex, the more they act as true extensions of the self. Yet, this intimacy also brings forth questions about autonomy and identity:

Surface-level wearables offer clear benefits—they could improve sensory feedback, monitor health, and help guide the user to boost performance without changing our natural body. However, relying too much on them might create dependency. In contrast, deeply integrated technologies like neural implants and nanotech interfaces merge our biology with digital power, offering new abilities that could transform human potential. Yet, this close integration also raises serious concerns about privacy, identity, and whether we risk losing what it truly means to be human- which is linked to dependency and deeper philosophical questions. From a holistic standpoint this discussion is more aligned with this futurism. This is why non-duality is an important perspective in this discussion.

Transhumanism is both the philosophical and technological pursuit of transcending human limitations through developing technology, ultimately aiming to redefine what it means to be human. This is not limited to digital technology either, Medicine is a form of transhumanism when applied through the usage of “Nootropics” for example.

“A nootropic is any compound that enhances mental performance while remaining free of significant adverse effects.”

(Giurgea, Malík, Tlustoš, 2022)

Adopting a transhumanist perspective, wearable technology emerges not only as a tool but as a transformative force in human evolution. Transhumanism envisions a future where technology extends human capabilities, transcending traditional biological limitations. In the realm of HCI (Human-Computer Interaction), this evolution is already underway. User interfaces are becoming more intuitive, and modern household devices are designed to integrate seamlessly with our cognitive and sensory processes. Such advancements also carry the risk of reducing our humanity to a series of mechanistic functions if viewed from a certain perspective. As individuals increasingly modify their bodies, whether to enhance performance, alleviate disabilities, or conform to societal pressures- the line between human and machine grows ever thinner. Non-duality is a compatible perspective that may be helpful for the mainstream to adopt in the case of psychological issues amongst users of future augmentations.

Societal pressures such as drive for competitive advantage to the fear of social rejection may compel individuals to pursue technological augmentation as a means to conform and excel. As our biological identities merge with digital enhancements, we face long-term risks: the dissolving of personal identity, the invasion of privacy, and a gradual loss of individual agency and depending on perspective: critical ethical and societal concerns.

Western societies have traditionally maintained a strict distinction between the natural body and technological artefacts, often viewing significant bodily modification with skepticism. In contrast, many Eastern philosophies embrace the fluidity of the self, viewing the integration of technology as a natural evolution of human capability.

This is not a binary choice but rather a reflection of differing cultural paradigms. In the West and Middle East, dualistic traditions tend to emphasise a clear separation between self and other, whereas in many Eastern traditions, individuals are seen as part of a greater whole—a perspective that readily accommodates a changing body and evolving sense of self. Although this holistic framework may come at the expense of the rich romanticism and narrative structure characteristic of traditions like those in Abrahamic religions, it offers a more adaptable foundation for navigating the interplay of attachment and detachment within the psyche. This cultural divergence is increasingly evident in the wake of late-stage capitalism, where global interconnectedness and the “easternification” of the West have fostered a greater openness to non-standard solutions. As wearable technology becomes more pervasive, its adoption is not merely a question of function but also a cultural negotiation:

balancing the desire for individual enhancement against the risks of losing an authentic sense of self according to ones own beliefs.

In exploring the multifaceted role of wearable technology as extensions of the body, this text has highlighted how early sensory conditioning, the phenomena of prosthetics and phantom limbs, and the spectrum of technological integration all converge to challenge traditional notions of the sense of self. In this emerging perspective, wearable technology is less about only adorning the body and more about augmenting it- adding modular, replaceable components that not only redefine functionality but also offer significant medical benefits, such as enhanced mobility and improved rehabilitation outcomes for certain use cases. As we embrace devices that serve as both functional tools and sensory substitutes- ranging from quick-release accessories to integrated limb enhancements, we stand at the edge of a transhumanist future that reimagines the boundaries of the human experience. Even everyday items, such as bags and other accessories, are being reimagined as modular, adaptive systems that mirror this innovative spirit. While the promise of enhanced capabilities and a more interconnected sensory landscape is enticing, it is worth repeating that maintaining a careful balance between relentless innovation and the preservation of human authenticity at a pace that is comfortable for the living generations.

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