Design at Work

by estefania acosta

This is an exploration of how ergonomics and office design took shape during the industrial era and how it has played an integral part in crafting its own demise. Ergonomics is usually offered as a solution, not framed as a problem. If we trace the trajectory of ergonomics in becoming a prevalent practice and a universally accepted precept of design, questions arise about its relation to work and other socio-economic issues. In order to meaningfully move towards enhancing people's work lives, we must first reassess notions of productivity and efficiency.[1]

To achieve this, we need to reconsider the physical spaces where many people spend roughly one third of its lives. Consequentially, this exploration points towards the notion that ergonomics is not always beneficial, especially if it allows us to ignore the underlying issues of contemporary businesses. By allowing companies to use comfort as a tool of capitalism, ergonomic design is successfully changing employees' behavior. The unquestioned status of ergonomics in ethical design practices makes it easy to overlook how the science of efficiency patches over physiological, mental and emotional facets of the workplace. At the same time it presupposes that the main goal of enterprise is to be as profitable as possible.

THE BODY AT WORK

It's telling that the case in favor of workplace ergonomics is always made by framing it as a productivity tool, one that can increase profits in the long-term for companies. Although it may be natural for a company to make decisions primarily based around generating income, it provokes the notion that if ergonomics were to result in more benefits for the company than its employee, it would still be institutionalized.

Its basic premise dates back to antiquity, but a more recognizable form surfaced at the start of the 20th century. Scientific management, or Taylorism, arose for the idea that in order to increase the amount of coal a worker could shovel, it had to be cut into smaller pieces.[2] Its motivation was to optimize the task, and fortunately, the process improved worker's conditions. Since then, there has been a shift in focus. As offices became the most ubiquitous places to work, we now refer to 'Human Factor and Ergonomics' and workplace design as everything from cognitive processes to policies, team building and organizational structures. It would be naive to think, that ergonomic design would be instituted without being cost-efficient, just as Taylorism's basic premise was always productivity for profitability's sake. On the surface and to some extent beneath it, ergonomics is evidently a positive thing for people at work. It equips an environment around a person who performs a particular task, and when applied correctly has a direct impact on the worker's wellbeing. Design, one could argue, can claim a kind of success in workplace ergonomics. It is hard to argue against the concept that spaces and objects should always carefully consider the stresses and strains of the human body. It is expected that designed spaces aspire to be engaging and attractive enough to compel a person to stay, and ideally, better facilitate their duties

Thus, a workplace is designed to contain both comfort and productivity, characteristics that are directly correlated.[3] There is no apparent tension here, except for a presumably significant initial investment, but the argument could stop there. And in fact, it actually has—ergonomics has permeated workplaces and has been increasingly adapted to other consumer products. Hardship and discomfort have been traditionally accepted as a fact of work. Thus, the establishment of seated deskwork is accepted as one of the benefits in pursuit of comfort. Adverse effects that arise from this shift emerge over the long term and can be chalked up to personal weaknesses—genetics, diet, or other negative habits outside the office—and thus not attributed to sitting. As a result, design's complicity in the rising numbers of people with obesity, for example, is easily ignored.

On average, people sit for 50 - 70% of their day.[4] Most of those hours are at work given that a typical weekday is defined by approximately nine hours of work.[5] Ergonomic studies have shown that the human body breaks down after long periods of idleness. To overlook this information in the design of workplaces is a severe dereliction, particularly as a branch of design and science that presumes to hold the human body up as the protagonist.

Other physical distresses of contemporary workplaces include carpal tunnel syndrome (still not completely understood or avoidable),[6] damaged eyesight (irreversible and considered an inevitable part of growing old),[7] and tension migraines (painful to the point of incapacitation). The fact is that the body is responding to a task for which it is not equipped. Kevin Logue, president at Professional Ergonomic Solutions states: "The root of the problem lies in a fact that seems counter-intuitive: the human body is not made to sit for extended periods of time. We are designed to be upright, walking, running, and on the move. Sitting and standing still for extended periods of time are detrimental to our health."[8] This concept is at odds with current workspaces that champion ultra-productivity to fuel ultra-production. Even when we consider working remotely as an option, the fact remains that the majority of white-collar work requires sitting at a computer, in front of a desk, and for long hours.

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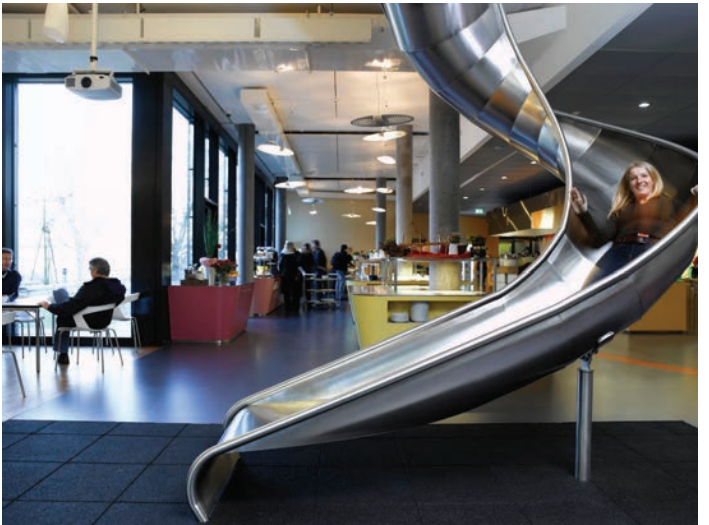

FIGURE 1 *Slide in the Google offices in Zurich. Courtesy of Google.*

Recently, companies have begun to take note of lost capital due to paying for health insurance for unhealthy employees. This has served as a small motivator behind taking small measures towards prevention. Unfortunately, the most common solutions offered are workplace aerobics and small breaks throughout the workday. In effect, these tactics may bring employees to the healthy side of fit, albeit barely. It seems to be a hard fact to face that the most ergonomic chair in the world might still be worse than no chair at all.

Competition among companies has driven innovation in technology in incremental and unforeseeable leaps. A company's success depends on gathering the most talented and loyal employees, having the most productive team, and cutting the most cost in order to attain the highest profit. The result is a fragile balance between keeping people as comfortable and happy as possible, while at the same time focused and efficient.

This competition gives cause for new tendencies among large companies that can afford to invest in experimental office design. Companies that ostensibly value employee comfort are consistently challenging the traditional workspace by hiring designers to create spaces meant to "promote cooperation and innovation."[9] Experimental office design (napping pods, slides, etc.) is a competitive advantage that only large companies can afford to implement.. While people who work at these innovative places may be happy to do so, the rest of the white-collar population can only adjust their chair and get back to work.

THE MIND AT WORK

During the 20th century in the United States, office workers increased from 20 - 60% of the total working population.[10] As the physical workload decreased with equipped environments and ergonomics, the mental workload increased. Companies could now employ minds rather than bodies. This shift presumably benefited people with disabilities, decreased the gap between men and women, and increased the demand for more technologically minded professionals. Division of labor and specialization has had a great impact on the design of offices; in turn, design has served to maintain the hierarchical systems in place today.[11]

Cognitive ergonomics came about with the rise of psychology and artificial intelligence.[12] It is based on the design of human-computer interactions to modify mental workload and aid decision-making. In other words, it engages directly with a person's mind in a calculated way. Its premise is so pervasive that it's one of the core principles in marketing and design thinking.

The effect of workplace design to make people work for longer periods of time by providing comfort can be framed as either beneficial for the employee, by providing him comfort, good for the company, by increasing profits, or positive for both, by finding the balance between them. The problem arises when we consider how little debate there has been about the role of design—cognitive or otherwise—within the workplace. Assuming that design is limited to the solutions that condition an environment, unintended consequences are catching up with office dwellers all the time. When Herman Miller introduced Ergon, the first ergonomic chair in 1976 it was after ten years of researching posture.[13] A recent study by researchers from Columbia, MIT, Northwestern, Harvard and UC Berkeley took a look at body postures enabled through ergonomic chairs and their impact on what they defined as "dishonest behaviors." They found that, "individuals in expansive physical settings reported that they felt powerful. This sentiment was the common link between those in an expansive physical setting who also exhibited dishonest behaviors such as stealing, cheating, and violating traffic laws."[14] This may be a far-fetched proposi-

tion, and practically impossible to predict. Yet, we cannot continue to ignore the effects of a sedentary mode of work, especially if we consider how many consequences have already been ignored in the name of profit and productivity. Present modes of work have been dictated by the speed with which design becomes normative and not our ability to measure its effects. The capacity to ***be*** productive makes us think that we always *have* to be.[15]

THE SPIRIT AT WORK

When 17 Foxconn employees committed suicide in Southern China,[16] the scandal provoked endless discussions about the work conditions in economies primarily driven by factories. The company responded with measures that ranged from forced legal waivers to bluntly effective suicide nets. This tragedy-turned-spectacle was so notorious mostly because of the company's ties to Apple and the ever-controversial iPhone. Reports and analyses surfaced in news outlets about how the company perpetuated the conditions in which workers were compelled to jump from the complex's roof, and how it did so without breaking any of the country's labor laws. Worse still, Foxconn is reportedly one of the most humane factories in China to work in. [17]

Reports such as this force society to stop and reflect on what kind of systems are in place that result in people committing suicide. Everything from consumerism to international laws was blamed for the tragedy, but this situation is replicated the world over. Due to sheer numbers, the Foxconn factory scandal stood out against a backdrop of seemingly isolated incidents. In 2010 an NBC article titled "Workplace suicides in the U.S. on the rise"[18] points to three such cases, which are just a sampling of the greater population. Extreme situations like this are unfortunately easy to explain away as personal problems, economy crises, or even pre-existing mental health issues.[19]

Meanwhile, depression and burnout are already so prevalent that large companies have policies and guidelines on how to handle them. Anxiety disorders alone affect approximately 40% of American workers "persistently and excessively."[20] Stress is meant to help the body respond to 'extraordinary' situations,[21] but if 40% of America's workforce is living in what they describe as excessive anxiety,[22] the situation no longer qualifies as 'extraordinary,' but a sad, perpetual state. In these factories and offices alike, supposedly designed around the needs and desires of humans, ergonomics and design are failing by excluding, or even exacerbating the emotional consequences of overwork.

Admittedly, ergonomics is not only related to the design of workplaces, nor is it single-handedly responsible for the directions it has taken. Rather, as a mantra used to misrepresent what it means to live and work in an artificial environment, it is symptomatic of the deeper problems addressed here. The physical and psychological realms of workplace design have left questions unanswered and glossed over problematic conditions. In so doing they have created the paradigms we now hold close as we face an age of socio-technological overhaul.

Estefania Acosta is a student in the MA Design Studies program at Parsons.