

# **CORE PRINCIPLES**

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**MUSIC - UTILITY**

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## STATEMENT

Digital hardware and software formalise ideology into standardised systems where undesirable actions are difficult or impossible to perform. 'Core-Principles' positions scientific management as the ethical blueprint for digital capitalism. 'Core Principles' is a speculative taxonomy of movements essential to everyday life and functioning in the economies of the 24th Century.

The Core Principles are derived from the work of Frank and Lillian Gilbreth, contemporaries of Frederick Winslow Taylor. In 1911 they published a book titled 'Motion study: A method for increasing the efficiency of the workman'. Their book contains '12 variables of motion'; a set of principles designed to optimise the bodily movements of workers and maximise their productivity. 'Core-Principles' adapts the Gilbreth's 12 variables to the context of digital labour, and envisions a future society structured accordingly.

# INTRODUCTION

Gilbreth, 1911: Motion study as herein shown has a definite place in the evolution of scientific management not wholly appreciated by the casual reader. Its value in cost reducing cannot be overestimated, and its usefulness in all three types of management - military or driver; interim, or transitory; and ultimate, or functional - is constant... when applied to unsystematised work, the output can be more than doubled, with no increase in cost. When the interim system takes up the work of standardising the operations performed, motion study enables the time-study men to limit their work to the study of correct methods only.

Gilbreth, F. B., & Kent, R. T. (1911). Motion study: A method for increasing the efficiency of the workman. D. Van Nostrand Company, p3-4.

2422: Not long ago, in the year 2412 a group calling themselves the profits of old materialism led a combined attack on all 617 super server farms on Earth. This attack eliminated almost all digitised knowledge. People who had acquired too much knowledge before this purge are now thought to be dangerous. Not long after this attack, Frank B. Gilbreth's text became the only text available for study in Australian universities. As his films (which you are now watching) indicate, his ideas were more agreeable and amiable than the work of his contemporary Frederick Winslow Taylor. Various management subcommittees reasoned that Gilbreth's wellness oriented approach to labour optimisation offered the most comprehensive summary of their own management style. His 12 variables of motion have been applied as best-practice-core-principles to all forms of human labour whether physical, mental or spiritual. This presentation will recount some of the events preceding the rise of Gilbreth's ideas, summarise the core principles, and inform you on the Zeitgeist of the early 25th century. We will see how all our mental, cognitive, bodily and emotional faculties have been gainfully optimised so as to increase operational efficiency in all areas of living and functioning.

# 1. ACCELERATION

*Gilbreth: In considering acceleration of speed as an element of any motion, we must determine:*

1. *The amount of acceleration that is possible or economical to obtain.*
2. *The means by which acceleration can be obtained.*
3. *The effect of the acceleration on*
  - A. *Economy in time required to make the motion.*
  - B. *Economy in time required for rest to overcome the fatigue of having made the motion.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p65.

2422: Cars, trains, sports people, production lines, computer processors, express delivery and all manner of administrative and information based processes have accelerated. All forms of data can now be accessed and modulated through intuitive proprietary software interfaces. At one point in the early 21st century, acceleration was at the centre of a short-lived intellectual fad. A group of people believed there were in fact limits to growth, and that if the economy was accelerated it would destroy itself. Subsequent events proved them wrong, and acceleration became a dirty word in political theory. In the late 21st century, the off-shoring of manufacturing and primary industries necessitated the valorisation of processes less beholden to concrete limits set by the Earth's environment. The transformation of raw materials into goods, and their subsequent sale and distribution decelerated, while the commodification and exchange of less tangible things such as thoughts, feelings, communication, information and discourse rapidly accelerated. Although Gilbreth's maxims were developed in the context of manual labour, they proved to be extremely malleable and provided core principles for the acceleration of all kinds of immaterial phenomena related to essential human faculties. Once basic social reproduction was almost entirely automated, the economies of a minority of wealthy nations transitioned towards speech, writing, argumentation, memory, media production, the branding of the soul and personal affectation.

## 2. AUTOMATICITY

*Gilbreth: Nearly all often-repeated motions become automatic. This is especially true of motions that require no careful supervision of mind or eye.*

*The automaticity of motions is of great assistance to the worker whose training and methods conform to standardised motions. This fact makes it necessary to have the apprentice taught the right motions first, last, and always.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p67.

2422: In the late 21st Century, the degree to which various forms of labour could be automated was a common topic of debate. A series of political and military struggles over this problem culminated in the textile wars of 2089. Start to finish garment production was the last industrial process to be fully automated. The withdrawal of wealthy nations from territories with abundant cheap labour produced the last great populations of surplus humans, who were no longer necessary for production. A number of people had theorised that full automation would lead to something called 'fully automated luxury communism'. Although some successes were recorded in this area, the unwillingness of nations to relax border controls ensured that the majority of Earth's population would not receive the benefits of financial redistribution, which was for a time referred to as 'universal basic income'. The Earth was divided into two political blocs roughly corresponding to what was once known as the global north and the global south - the automated, and the manual zones respectively. China and the former United States were notable exceptions. They roughly swapped positions in terms of labour relations. Some nations established networks of fiscal re-distribution, while others were marooned in a state of monetary and material stasis characterised by the violent maintenance of private property, kleptocracy and ecological destruction.

### 3. FOOT-POUNDS OF WORK ACCOMPLISHED

*Gilbreth: After-all, a human being or a work animal is a power plant, and is subject to nearly all the laws that govern and limit the power plant. It is a law of motion study that, other things being equal, the less number of foot-pounds of work done by the workman, the smaller percentage of working hours he must devote to rest to overcome fatigue.*

*It is therefore of great importance in obtaining the largest possible output that the work shall be arranged and the workman so placed that he can do his work with the least possible amount of foot-pounds of work done per unit of output accomplished.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p76.

2422: Although automation offered the means to eliminate scarcity and suffering on a global scale, its benefits were unevenly applied. This ensured that the manual zones of the Earth remained in service to the automated zones in ever more subtle ways. It became apparent that new forms of 'immaterial' productivity could never be truly immaterial without benevolent global governance, which never materialised. Ever intensifying demands for efficiency in the automated zones were satisfied by outsourcing resource extraction and labour to the manual zones. Rare Earth Elements continued to be mined and refined in dangerous conditions in the manual zone until they ran out in the early 23rd century. Gadgets and electronics, which fetched higher prices with 'artisan' status attached, were still produced by hand in the 'special economic zones' maintained in parts of Asia and the former United States. The automated zones had insufficient renewable energy to power the enormous server farms, electric transportation and automated factories required for to maintain their lifestyles. They were forced to rely on natural resources from the manual zones. US foreign debt hit a high point of US\$35 trillion in 2315, the majority of which was held as government bonds by the united and automated zones of East Asia. In a reversal of 21st century global politics, these governments enforced austerity measures and exploited the cheap labour now readily available in North America.

## 4. COST

*Gilbreth: The cost of motion, absolute and relative, is a subject too large for any person, firm, or corporation to hope to cover. If complete data are ever to be gathered on it, the cost keeping, recording, and deducing will have to be done by the government.*

*But all work done by the individual investigator will result in real cost reducing, with increase of output, which is the ultimate purpose of all motion study.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p70.

2422: Zero cost production was achieved in the early 22nd century. It was once thought that surpluses, margins and rates of profits tend to decline over time. This perspective is now historical. Although the notion that capital always tries to reduce the cost of production was once highly contested, most scholars have now forgotten this debate ever took place. The laborious elements of not only industrial, but also platformed production were eliminated for around 1/3rd of the global population. Server space and data allowances were declared a human right (only enforced in the automated zones), while programming, maintenance, moderation, data collection, data modelling, and more prosaic functions such as vehicle operation were all automated. While the early image sharing platforms of the early 21st century employed people numbering in the dozens, similar platforms in operation 100 years later employed no one. Platforms were now owned and operated by incorporated associations maintained through the 'automation levy', which was a tax placed on the atomic replication machines owned and operated by Creativity Inc, the sole remaining private company. STEM subjects became unavailable at universities in Australia and were entrusted to a small group of apparatchiks reporting directly to the Reserve Bank. Arts subjects necessary to the performance of unnecessary labour (which we will soon discuss) were made both free and compulsory.

## S. DIRECTION

*Gilbreth: In most cases, the direction of a motion that is most economical is the one that utilises gravitation the most. Oftentimes delivering material to a high-priced workman by leaving the material in a high position also makes easy unloading of the low-priced workman...*

*The best "direction of motion" is not only important in itself for increase of output; it must also be kept constantly in mind in standardising the placing of both materials and men...*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p74.

2422: During the second half of the late 22nd Century, gravitation became the primary metaphor for all material, aesthetic and cognitive motions. Gravity became the central metaphor for all executable human actions, which came to resemble pre-determined, immutable paths towards a single centre. All protocols became unidirectional, standardised and could only be customised within a range of minor parameters. Thus the flow of history, which had previously been conceived in Hegellian terms as a single narrative proceeding through the dialectical resolution of contradictions, and later in post-modern terms as the proliferation of innumerable and contemporaneous flows, now took on the appearance of gravitational force. Whereas previously the space of flows had implied a multiplicity of motions, all motion now was now unidirectional, and tended towards its optimised form. In practice this meant that interfaces ceased to shift and evolve, music and narrative forms were organised into concrete systems of genres, images depicted a fixed range of subjects, leisure time was divided among a finite range of activities (tennis, dancing, yoga, camping, frisbee, alcohol consumption, vaporised marijuana). Consumer goods are each customised along five axes of differentiation, and so on. In effect, the inefficient aspects of innovation were identified and eliminated.



## 6. EFFECTIVENESS

*Gilbreth: Effectiveness has been touched upon in discussing “combination with other motions”. An effective motion is one that produces the desired result. Oftentimes whole processes, methods, and operations can be so changed as to makes the succeeding actions more effective.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p76.

2422: Effectiveness became second only to efficiency as a widely held value. The bureaucratic device of the KPI (Key Performance Indicator) became central to all social, economic and industrial processes. So much so, that to deviate from the pre-determined outcomes of any process was punishable by ‘revocation’, which meant exclusion from income redistribution and the assignment of a menial task for a period of three months. These tasks included exercising dogs, child-care, property management, conflict mediation, conveyancing and tree surgery—which had been deliberately excluded from the great automation pushes of the early 22nd century. Data-based optimisation became a feature of all areas of life. Surveys, performance evaluations and satisfaction reports were completed following all interactions, completed tasks, meetings and leisure activities. This data was analysed and modelled at a single facility named ‘The Bureau of Optimisation’. What had once optimistically been referred to as ‘machine learning’ and ‘artificial intelligence’ is now more accurately referred to as simply ‘calculation’.

## 7. INERTIA AND MOMENTUM OVERCOME

*Gilbreth: There are two ways by which the amount of inertia and momentum may be reduced.*

1. *By standardising surroundings and equipment so that the inertia and the momentum are limited to practically that of the materials, and not the materials plus arms and body...*
2. *By so standardising motions that as few starts and stops as possible occur from the time the material leaves the stock pile till the time it is in its final resting place in the work.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p77.

2422: The mitigation of both inertia and momentum has been central to global economic adjustment over the last two centuries. The economies of the automated zones returned to the elegant equations of the neo-classical Solow-Swan Model, but were updated to include the ecological contingencies of Herman Daly's steady-state economics. What resulted was not the stasis of traditional planned economies, nor the anarchy of unmitigated capitalism, but rather a macro 'almost steady state' founded on global disequilibrium. Boom and bust gave way to an almost flattened X-Y space. Marx's 'all that's solid melts into air' became 'all that's solid melts in the manner of a slowly retreating glacier'. The economic managers of the automated zones aimed to eliminate volatility and establish a permanent horizon for capital's continued but incremental growth. In the late 23rd century, all resource extraction and consumption came under the regulatory control of a global body staffed entirely by leaders from the automated zones. As entropy pessimism increased among the general population, and the heat death of the universe became a popular topic of discussion, an intensive effort was undertaken to achieve resource decoupling. Although the Black Swan effect can never be entirely mitigated, enormous increases in data collection and computer modelling power have severely reduced the risk of pandemics, interstellar comets, and other unpredictable phenomena.

## 8. LENGTH

*Gilbreth: A general rule of motion economy is to make the shortest motions possible. Eliminating unnecessary distances that workers' hands and arms must travel, will eliminate miles of motions per man in a working day as compared with usual practice.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p79.

2422: The concept of 'sustainability' came to suggest not only environmental responsibility, but also a certain stability of mind. Whereas earlier periods of economic growth tended to intensify experience, the less dynamic economies of the automated zones saw the growth of 'slow life' movements. People began to limit their exposure to intensity of feeling, and for the most part are able to quarantine themselves from destabilising life experiences. It is considered offensive to elicit 'emotional labour', which is performed only in rare circumstances. In contrast to the experience economy of the 21st century, the absence of excitement or change has become a marker of prosperity. The eradication of many life threatening conditions and bodily wear and tear led to a cultural emphasis on longevity. As lifespans increased to over 150, the fetishisation of youth gave way to a kind of eternal middle age, where food, furnishings, real estate and comfort became ever more important markers of status. Representations of violence and risk became unacceptable in media. Violent and erotic media produced in the 20th and 21st centuries became contraband and fetched enormous prices. These shifts are thought to be the result of numerous global pandemics, during which social isolation and risk avoidance were mandatory. All viruses became treatable at the beginning of the 23rd century.

## 9. NECESSITY

*Gilbreth: The necessity of the motion is such an important variable that an investigator is tempted at first glance to divide all motions into necessary and unnecessary, and to eliminate with a stroke those that appear to him to be unnecessary. A more thorough investigation will be apt to prove that no such summary elimination is advisable.*

*A motion may be an unnecessary motion in a necessary sequence, or it may be a necessary motion in a certain sequence, but the whole sequence may be unnecessary or inadvisable.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p81.

2422: After the global pandemics of the 21st century, it became apparent that almost all labour was unnecessary. Fitzroy North, once dubbed Australia's whitest locality, became the archetypical space of unnecessary labour. Infinite server space, Universal Basic Income and fiber-optic to the node resulted in all inhabitants of the suburb joining a 'single-community-discussion-forum'- an eternal social factory consisting of sub-reading-groups, reading list compilation workshops and auto-poetic-aesthetico-political activism. Funding bodies tried to take 'The Fitzroy Model' regional, but there was little interest in outlying areas. The discursive modes of the discussion group were reified by a grant system that rewarded language based performativity. Optimised exercise regimes enabled participants to continue their discussions with minimal agitation. A chorus of social-practice oriented performance lecturers made innovative 'calls' for intimate social distancing strategies. This culminated in the smart cities of the late 22nd century, teeming with architecturally significant pod towers that rearranged themselves every 12 days so as to distribute light and views. Citizens could host a single contact-traced interaction every 6 days. This era was later dubbed the period of non-necessity, and led to the radicalisation of a disaffected minority who later executed the server attacks of 2412.

## 10. PATH

*Gilbreth: The determination of the path which will result in the greatest economy of motion and the greatest in increase of output is a subject for the closest investigation and the most scientific determination. Not until data are accumulated by trained observers can standard paths be adopted. The laws underlying physics, physiology, and psychology must be considered and followed. In the meantime, merely applying the results of observation will reduce motions and costs and increase output to an amazing degree.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p82.

2422: Over the course of the 22nd century, the Victorian coast slowly moved towards its eventual location along the edges of the Yarra Ranges in the west, the outskirts of Bendigo in the North, and close to Ballarat in the west. As thermal expansion increased and the last vestiges of the Antarctic Ice Sheet melted, this new coastal landscape formed a stunning backdrop for a new wave of property speculation that continues to this day. The coast is not predicted to move again for around 1000 years, at which point it will begin its long march back south as the ice sheets begin to regenerate. It is projected that, by then, carbon sequestration techniques will have created a block of pure graphite the size of a small moon. Prominent figures within the single-community-discussion-forum had previously advocated launching the graphite block into counter-orbit with the moon and inaugurating a terraforming project that would provide relatively low cost housing and writing residencies. However, this plan never came to fruition; a group of design-thinkers hatched a more profitable plan based on the reintroduction of up-cycled graphite pencils. Dreams of space based capitalism, geodesic domes on Mars, and off-world cybernetic societies were common in this era, however they all fell prey to wellness oriented counter-schemes originating from the single-community-discussion-forum (which were more feasible in the eyes of funding bodies).

## 11. PLAYING FOR POSITION

*Gilbreth: Each motion should be made so as to be most economically combined with the next motion, like the billiard player who plays for position. The direction in which a motion is made may affect the time required for subsequent motion...*

*When the motions are made in the correct sequence, many of them can be combined so that two, and in some cases three, motions can be made as one motion, in but little more time than is required for on motion.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p83.

2422: Social prestige became closely linked with 'revocation': exclusion from income redistribution resulting from the failure to achieve key performance indicators. Those who had never been revoked, or perhaps only once or twice, were considered highest on the social scale, while those who had been revoked more than ten times became a new type of underclass. Not in the financial and material sense of traditional class difference, but something closer to invisibility. Exclusion from income redistribution was akin to temporary excommunication. The highly revoked were not considered for prestigious social roles, were not able to access the single discussion group. This demographic was prone to falling behind on cutting edge discursive trends, which constituted the main form of aesthetic innovation and social capital. This was the means through which artificial scarcity was created in the economies of the automated zones.

## 12. SPEED

*Gilbreth: Usually, the faster the motions, the more output. There are other advantages to speed of motions besides the fact that they require less time. Speed increases momentum, and this momentum may be utilised to do work... High outputs are generally the result of the habit of speed in motions. Habits of speed are hard to form, and they are hard to break. Next to fewest motions, speed of motions is the most important factor of high record of outputs.*

Gilbreth, F. B., & Kent, R. T. (1911). *Motion study: A method for increasing the efficiency of the workman*. D. Van Nostrand Company, p84.

2422: It was once assumed that processing speeds would continue to accelerate at or near the rate first described by George Moore in 1965. Moore's Law was proven to be incorrect. Although the MOSFET (metal-oxide-silicon field-effect transistor) was once manufactured in greater numbers than any product, the non-silicon elements required for controlled oxidisation (vital to their production) became scarce in the mid 23rd century. Although silicon is still one of the most common elements in the Earth's crust, reserves concentrated enough for mining have been exhausted. Almost all of the estimated 13 sextillion silicon transistors manufactured between 1960 and 2018 were disposed of in poorly regulated E-Waste schemes, rendering them largely unrecyclable. The majority of the world's theoretically accessible silicon is now locked up in glass, concrete, bricks, ceramics and other common materials, access to which is politically fraught. Computer processing power became subject to the same 'almost steady state' seen in the economy in general. Gains in computational efficiency have remained at or close to 0 for the last 60 years, helping to further popularise the concept of entropy pessimism, to which the single-community-discussion-forum has lately been devoted. Dreams of space-based capitalism, which had once fuelled belief in limitless growth, depend on the invention new synthetic semi-conductors. It is not known when or if these materials will become available.