

Chapter 2

The First Layer of the Bubble Theory: The Symbiotic Duo

Abstract The foundation and first layer of the Bubble Theory is the symbiotic duo, where the desires of the species and the desires of the self (an individual member of the species) reside. Despite the fact that these desires are often at odds with each other, one cannot survive without the other. Without individuals, there is no species to speak of. Without the species (i.e., other individuals in the same species), an individual cannot survive for long, let alone lead a fulfilling life. This symbiotic relationship between the two entities is the fundamental force that drives how human society operates. In this chapter, I discuss the scientific basis of this relationship, and follow with a detailed analysis of the misaligned interests of the duo—specifically, the misaligned objectives between species and individuals, and the misaligned objectives of different individuals. Finally, I discuss the mechanisms behind the delicate equilibrium of the duo. The *principle of self-insufficiency* forces individuals to compromise for the good of species. The *principle of childlessness* forces species to defer to the needs of individuals. Finally, at a more fundamental level, *the law of miniminds* states that desires of the species and desires of the self are embedded in each individual's mind, and an intrapersonal equilibrium between the two types of desires exists within each of us. These three forces together ensure the broad equilibrium we observe in human society. This structure, however, is not static. It evolves in both the desires of the duo and the equilibrium, and onerization has accelerated this change.

Keywords Symbiotic duo • Theory of intraperson games • Incentive misalignment • Childlessness • Self-insufficiency

2.1 The Symbiotic Duo and Its Desires

In the Bubble Theory, the drivers of everything else (ENs, HDPs) are the desires of two entities, namely, the self (an individual living being) and the species (the species to which the self belongs), as well as the delicate equilibrium between the two. I differentiate between the desires and the carriers of the desires. Desires of

the self strictly maximize benefits for the individual entity; on the other hand, desires of the species seek the best outcomes for the species as a whole. Every individual of the species carries desires of the self, as well as desires of the species.

What are the desires of the self? At the biological level, the answer to this question is unambiguous. As evolution theory has demonstrated, the objective of life is survival (both for the self and progeny). Any living beings that lack either the drive or the ability to survive will likely die young, before producing offspring; thus, such genetic dispositions are lost over the course of evolution. Those left are thus endowed with survival as their primary life objective. Sentient beings like humans, however, are not satisfied with this base level purpose. We pursue other things that provide additional purpose to our lives and make our lives more fulfilling, and we continue to ask and ponder the ultimate question, "What is the meaning of life?" It is against this background that we humans develop vastly different desires across individuals that give each of us, as independent entities, happiness, and purpose. Clearly, the carriers of desires of the self are individuals.

Unlike individuals, a species does not exist directly as a physical entity; rather its existence is based on a collection of like individuals. In addition to lack of physical unity, it also lacks a centralized decision-making unit, and cannot make a decision in the traditional sense. Nevertheless, the long process of evolution has endowed species with the unambiguous desires of survival as well. Using the same logic used for individuals, a species that is not highly motivated to survive would have been long lost in the evolution process. Species come into existence all the time and species die out all the time. The survival of the fittest principle is true at the species level as well. Species achieve this objective by ensuring that at least some members will survive at any given time, ideally the ones that will provide a better chance of survival in the future.

The carriers of desires of the species are still individual members of the species, due to the lack of a unified physical or decision-making unit. However, different individuals may carry different levels of desires of the species. At one extreme of this spectrum, a single individual may represent the species and disregard most of his or her desires of the self. At the other extreme, an individual may completely ignore the needs of the species and act in a wholly self-interested manner. Because the species objective is only indirectly carried out by individual members who have their own objectives (e.g., survival at the individual level and pursuit of physical pleasure, among others), the process of such preservation can be inefficient, and at times, disastrous. Due to the lack of a central decision-making unit, unlike individuals, the desire of the species is limited to its survival.

The duo maintains a delicate relationship that is symbiotic. Without individual members, there is no species to speak of, and thus a species must rely on its members to exist. On the other hand, no individual member can live and prosper without the help of the species in the form of other members. Onerization is changing the balance of the symbiotic duo. More individuals now carry the desires of the species, and on average, each individual is giving more weight to the desires of species. The balance is tipping toward the desires of species. However, there are two fundamental incentive misalignments that add substantial tension to the

relationship, both between species and its members, and across different members of the same species. I discuss these misalignments further in the next two sections.

2.2 Misaligned Objectives Between a Species and Its Members

While this might sound harsh to some, the truth is that the species does not care about whether an individual dies or suffers, as long as the species as a whole prospers. This is analogous to the decisions made by military leaders in war, where the objective is to win the war in the end. From the leader's perspective, the soldiers are a means used to achieve the eventual objective of winning the war, and their deaths, while unfortunate, are expected. From the species perspective, there is nothing tragic about individuals becoming old and dying. On the contrary, this process may be considered a mechanism that gives the species a better chance of survival as the younger and stronger individuals are able to access and acquire more resources.

Clearly, individual members of a species have a very different objective. An individual is programmed to survive as a unit, and to live, ideally, forever. It hates to see that it has to die. Universally, individuals strive to live longer and better, which can be traced to two sources. The first source is the base drive we share with every living organism. The pursuit of immortality is a derivative of the survival instinct, which is the result of natural selection. It is ingrained in us. If an individual did not care to live, their genes would have been lost a long time ago in the process of evolution, and it is unlikely that they would have produced offspring to carry those genes forward. The second source is the fact that we are sentient beings, and we are self-aware as individuals. It is only logical for any sentient being to want to live long, and pursue self-preservation or even its own immortality as part of its quest to understand the ultimate question of why we exist. Due to a limited life span, naturally, individuals care about the present and near future more than the distant future.

One way to see their relationship is through the lens of the principal-agent problem. In this type of problem, the principal and the agent(s) have different objectives. The principal wants to achieve some objective that will benefit itself, and thus it designs incentives for the agent such that the agent will behave in a self-interest way that serves the best interest of the principal as well. In our context, the species is the principal, and the agent is individual. Instead of being designed by the principal, the incentive mechanisms for species and individuals have been selected over the long course of evolution and have served the purpose well. I discuss three such mechanisms later. As onerization further develops, these mechanisms might change over time.

I do see a major threat to the relationship between the species and individuals due to their differing objectives. Because of the development of science and technology (the same enlightenment that has enabled onerization), individuals now

realize that many of the things we do as humans make us pawns who act on the desires of the species to survive. I see this realization as the major threat to the objective of the species that could potentially damage the equilibrium we have now. As a result, some of the mechanisms that have worked well in the past may have diminishing power in the future.

2.3 Misaligned Objectives Across Members of a Species

At a more tangible level, the misaligned objectives between species and individual members are manifested through misaligned objectives across different members of the same species. Such misalignment takes three forms: those between the haves and have-nots, those between old and young, and those between living and future humans.

Humans are still at a stage of development where the wealth is not distributed in an equitable way. We are still organized into nations where different countries are at different stages of development with substantial differences in wealth. As a case in point, consider the fact that many people in developed economies die prematurely because they eat too much, while millions in the developing world die prematurely because they cannot afford enough nutrients. Even within countries, vast differences in wealth exist across individual citizens or regions.

Because of this disparity, the haves and have-nots have different objectives in life, and the nations (or regions) that represent them also have differing objectives. As a result, it maybe considered inequitable, or even immoral to impose on individuals to behave in ways that others think are correct (e.g., sustainable). Similarly, it maybe immoral to ask poor countries/regions to develop in ways that conform to what rich nations feel is the responsible development path. After all, the rich nations went through the stages of (irresponsible) development that they are now demanding the poorer nations to avoid, at the expense of the speed of development in these countries. More fundamentally, this is a balance between efficiency and equity. While living and developing in a particular manner is better overall (efficiency), it may not be equitable to some parties involved. Balancing the haves' need to "do the right thing" with the desires of the have-nots to achieve a quality of life on par with the haves in the shortest time possible is a major challenge. I elaborate more on this in the last chapter of the book on the role of the public sector.

The second misalignment is between the old and the young. Due to age differences, individuals have substantially different objectives because they know they will die at different times. The old care more about the present and demand resources and policies that will benefit the present, even at the cost of the future. The young, while caring about the present as well, put a lot more emphasis on the future (e.g., toward a point when they will become old themselves). The young thus prefer a balance between the present and the future.

In democratic systems where governments (and policies) are chosen by election, there exists a tyranny of the majority that has little to do with optimal balance.

Deferring to the voting power of senior citizens, no politicians in the United States are willing to advocate major changes to the social security system, even though the system may go bankrupt for people who are still young today. Governor Mitt Romney, the Republican presidential candidate in 2012, for example, always began speeches on his plan to save the social security system by emphasizing that his plan would not affect the benefits of those who were already retired or at least 55 years of age.

Similar observations can be made in the private sector. The power of the old, for example, has influenced perceptions and policies related to innovation in the pharmaceutical industry. Pharmaceutical companies have often been portrayed as “the bad guys” who set sky-high prices to make obscene profits. Substantial social pressure exists for pharmaceutical companies to reduce drug prices to make them accessible to everyone. However, a perspective that is often ignored is that such price control (either by policy or by pressure) will artificially depress corporate profits and thus incentives to innovate in the future. As a result, a savvy investor might choose to pull his or her money out of a pharmaceutical company that is forced to make less profit, further reducing the company’s ability to conduct innovation. Viewed from this perspective, while reduced prices would make the existing drugs accessible to most people, it is the younger generation who would bear any negative consequences of such action—in this case, failing to benefit from potential innovations (new drugs) in the future.

Finally, there is a fundamental misalignment of objectives between noncontemporary humans (i.e., those who are alive now and those who are yet to be conceived). The conflict between those who are alive and the unborn is even more complex. It can be debated whether those who have yet to be conceived have legitimate rights that those who are alive now must respect. And if so, what rights, and to what extent do we need to take their rights (and objectives) into our considerations of the present? The rights we bestow upon future generations, however, may come at a cost to those who are alive. Desires among the currently living to live the best life possible are in direct conflict with desires to maintain a world that is suitable for future generations. And, of course, the desires of future generations are that we leave them the best possible world.

2.4 The Principle of Self-Insufficiency in an Interrelated Society

I now discuss the three mechanisms that have been selected over the long history of evolution to hold the symbiotic duo in a delicate equilibrium. I differentiate them by calling them either *principles*, things that are true now, but could potentially change in the future, or *laws*, things that are fundamental and will not change in all likelihood.

The *principle of self-insufficiency* in an interrelated society refers to the fact that an individual is inherently unable to fulfill his or her life objectives alone. A person

must rely on others in an increasingly interrelated society for support, such that he or she does not just rely on people who are physically proximate, but also on people who are distant and different in many ways. This insufficiency can be classified as physical, emotional, and biological.

An individual requires assistance from others to make his or her life better, or just to survive. During the early stages of human evolution, we needed other members of our species to help us fend off predators and natural disasters in order to survive. We also needed the strength and wisdom of fellow humans to successfully hunt large animals. Time has passed and circumstances have changed, but our basic human needs have not. We now have professional armies to defend us from attacks, police to ensure our safety, and government agencies to help us during natural disasters. In fact, we have become more and more reliant on other members of our species over time. We have evolved into a society comprised of individuals with highly specialized skills and expertise that other people do not know but require. Medical professionals complete more than 10 years of training to acquire the necessary skills to take care of us when we are ill. Information technology professionals operate the Internet, which becomes more central to our daily activities each day, and yet most of us have no idea how it actually works. Viewed from one perspective, individual humans have regressed and lost the ability to do things that we used to be able to do independently. For example, most of us do not know how to grow crops or raise livestock anymore, and many of us may not be able to survive in the wild for long.

Specialization is accelerating in human society because, among other reasons: (a) the effort needed to acquire any valuable skill has increased; (b) specialized tasks are best performed by individuals who are naturally inclined to do them well; and (c) people who complete years of training for a specific task can do it much better and efficiently than laymen. Such specialization has made it possible for human civilization to advance to where it is now, but it also has made us ever more dependent on other human beings.

Humans are also social animals. Emotional satisfaction is critical for our survival and productivity. Without the company and friendship of other individuals, most of us cannot live a normal life. In the past, we relied primarily on family members and friends; however, with the advent of technology, we have become increasingly connected to a large and diverse group of people who provide emotional and social support. For the first time in history, our social networks may include people from all over the world whom we have never actually met in person. A casual survey of undergraduate students at the Smeal College of Business at the Pennsylvania State University revealed that students typically have around 800 contacts on Facebook. Judging by the time, a typical Facebook user spends on the site updating other people on his or her life and reading updates on friends' lives (up to several hours per day), the satisfaction that comes from interaction with other individuals is still essential to emotional health.

Finally, we are self-insufficient from a procreation perspective. One needs genes from others so that his or her offspring can survive (and have offspring). Furthermore, we need a gene pool that is sufficiently large and diverse. If the gene pool is small and

genes are too similar, our offspring will likely have inferior features and be susceptible to external threats (e.g., a particular strain of a virus) and congenital diseases.

Because of the principle of self-insufficiency, an individual cannot ignore the preferences of other individuals, both contemporaries and those yet to be conceived; he or she also cannot ignore preferences of the species once they become societal norms as a result of onerization. It is in one's best interest to care about other individuals and the cause of the species; otherwise, one will be treated as an outcast and will barely be able to survive. The effect of self-insufficiency is magnified in an interrelated society comprised of people of different ages (who will likely die at different times in the future), with different mental preferences and material means (i.e., wealth). Another dimension of interrelated society refers to the fact that people are increasingly connected to each other through technology and specialization. As a result, one must care not only about the people on whom one relies, but also the people on whom those people rely, and so on.

This principle thus serves as a mechanism for the species to induce beneficial behavior from individuals. Because of the principle of self-insufficiency, no one would dare declare that he or she does not care about others (including future others) and expect to be accepted by the society on which he or she relies. As such, the species is able to induce a social norm where caring about the future of the human race, the objective of the species, is guaranteed. Looking forward into the distant future, however, it is conceivable that this might change as humanity develops further. Reliance on other individuals to provide genes might change as technology advances. Machines and artificial intelligence might replace other individuals to satisfy one's physical and emotional needs. However, I do not expect these possibilities to manifest any time soon.

2.5 The Principle of Childlessness

This principle refers to the fact that a person can choose to live his or her life without producing any offspring. With childbearing, we normally think about the maximum number of kids one can or wants to have. The right to bear children is considered a fundamental right that few governments have restricted throughout history. (The most notable exception is the one child policy implemented in China over the last three decades, which allows couples to have two children if one parent is an ethnic minority.) I believe, however, the right to have as many kids as one wishes will gradually change, and I discuss this later in the book in the context of human development principles. In this subsection, I discuss the opposite, something rarely talked about—the right to remain childless. I think the right to not have any kids (*principle of childlessness*) will become a dominant force that will influence which policies are implemented.

Producing and raising a child, from a rational perspective, is an unwise investment of time and resources in modern society. Parents spend 18 or more of their best years in life (typically from their late 20s to their early 50s) for each child they produce,

working hard and spending more than half of their incomes creating resources that are used by their children. In return, children in a Western society typically will leave home once they go to college, come back for visits a few times a year (if they like their parents), and usually cannot be counted on for support when their parents become old and frail.

If this were an economic decision, one would be crazy to make such investment. Nevertheless, individuals continue to produce and raise offspring because they are rewarded by less tangible things such as fulfillment, obligation, and emotional satisfaction. But with the original purpose of having kids as a support mechanism for old age gone, more and more people are considering and practicing the no-child policy themselves.

As a result, the principle of childlessness may have a real and credible impact on society. More importantly for our purposes, there is a critical corollary of this principle: If every living human alive at a given time decides not to have children (for whatever reason), their simple collective decision will effectively render the human race extinct. In other words, the species has no future if the current cohort of living beings decides to exercise the principle of childlessness. The effect of this principle can be challenging to negate, as it is hard to induce (let alone force) people to have children to ensure the survival of the species. Becoming a parent is no small commitment, and conventional incentives (i.e., tax benefits, supplemental pay) are unlikely to be very effective.

This principle gives individuals substantial leverage over the desires of the species and other social structures (e.g., wishes of other individuals) and helps maintain the delicate equilibrium between the species and the self. For example, life cannot be unbearable for individuals, otherwise they may decide there is no reason to have children, or they will end their own lives before they have children. Related to this, any human development principles cannot be too forward looking in the sense that they over-sacrifice the interests of living individuals for the sake of the future generations. After all, the people who are alive now control whether future generations exist at all, and the voices of living individuals must be heard and incorporated into decisions. Looking into the distant future, however, this principle may lose its power as the species acquires other means to produce new human beings without the participation of living individuals.

2.6 The Law of Miniminds

This law is an extension and application of the theory of intraperson games (TIG) that I proposed in 2007. I first describe this law by defining *miniminds* and *overseers*, the birth and death of miniminds, the role of external force, and how individual decisions are made according to TIG. I then discuss the role of miniminds in maintaining the equilibrium between the symbiotic duo, and balancing misaligned objectives—both between species and individuals, and across individuals.

While the received wisdom has always treated the human mind as a singular entity, TIG takes a very different approach in describing its structure and inner workings. In TIG, an individual's mind is treated as an aggregation of two types of entities, miniminds and overseers. There are many *miniminds* inside a person's mind, such as reproductive urges (sex), hunger, shelter, love, sadness, happiness (and other emotions), etc. These miniminds are controlled by two agents in the mind that I call *overseers*. One of the overseers is called the *efficiency agent*, whose role is to ensure that decisions are the most beneficial to the individual as a whole. The second overseer is called the *equity agent* whose role is to ensure that each minimind gets its fair share of attention and its needs addressed. A mentally stable mind must accommodate the needs of many miniminds, otherwise a deprived minimind might disrupt the normal operation of the mind as a whole. So the role of the equity agent is not a luxury, but a necessity.

Miniminds are either born with the individual (genetically inherited from the parents) or acquired (learned) after the individual is born. The latter are assimilated throughout one's life, but are most easily acquired during early stages of development. One recent trend is the group of miniminds spawned by one's experience in virtual worlds (e.g., gaming). The miniminds acquired in such environments have no way to differentiate reality from virtual reality, and may induce an individual to behave in the real world as if he or she were in a virtual world.

Miniminds do not die in the sense of being completely erased from a person's mind. Instead, a minimind's role or prominence may simply degrade over time because our brain is developed to acquire, not erase, any established components.

Because of the malleability posited in TIG, forces external to an individual can have many different influences over him or her. First, they can initiate the emergence of specific miniminds. Second, the nature of specific miniminds can be modified (e.g., the relative importance of satisfying the minimind, the threshold of negligence the minimind can tolerate, what this minimind might do if it suffers prolonged neglect, etc.). Third, external forces may affect the objectives and decision rules of the two overseers. For example, while we all know what the word "equitable" means, there are diverse opinions on how it should be implemented in practice.

One analogy is to see the mind from the TIG perspective as a family of many kids and two parents where the miniminds are the kids, and the two overseers are the two parents. As in a family, the eventual decision is actually the outcome of compromise between the two overseers, after each considers all relevant miniminds' interests and its own decision rule (equity or efficiency).

In the context of the symbiotic duo, the *law of miniminds* provides the foundation that guarantees balance between satisfying the desires of the species and the desires of the self. The mechanism through which this is achieved is through the existence of two types of miniminds within every human: one is designed to meet the needs of the self, while the other is designed to meet the needs of the species, either directly or indirectly, by striving to meet the needs of other individuals, sometimes at the cost of his or her own life. Coordination between the efficiency

agent and the equity agent ensures that the misaligned objectives of the species and the self will thus be satisfied in a balanced way.

We have miniminds that represent the needs of the self (e.g., hunger, shelter, health, sensual pleasure, and accumulation of resources); we also have miniminds that represent the needs of the species (e.g., seeking a mate in order to create offspring, and protecting offspring, even at the cost of losing one's own life). Sex, for example, is arguably a minimind to serve the desires of the species to produce new members of the species, but we individuals like it so much because it is "bundled" with pleasure for self. Without such pleasure, an individual would be a lot less motivated to do it. Such "bundling" is a mechanism where individuals do the work of the species as a positive externality of what they do for themselves. Other species-friendly miniminds are born to an individual through his or her interactions with human society. Note that miniminds representing the desires of the species are typically concerned about related human beings in the present and immediate future, instead of abstract concepts far into future. This may due to the limitations of our minds, but also can be explained using evolutionary logic: genes get diluted quickly through the generations. In just five generations, only 3 % of our own genes are present in our so-called offspring. At that point, the concept of progeny is no longer meaningful, nor is the sacrifice justifiable from biological perspective.

It should also be noted that the miniminds representing the species may differ vastly from individual to individual, as well as their relative importance in their respective families of miniminds. It is conceivable that one can have no significant miniminds that represent species, resulting in an extremely selfish individual (some are even considered to be mentally ill, such as sociopaths). On the other hand, one may have many miniminds representing the desires of species that play dominant roles, and thus result in an extremely selfless individual. Most individuals are somewhere in between. The rules followed by the two overseers also differ across individuals.

TIG reveals that individuals are literally carriers of the desires of the species as well as desires of the self, in the form of two different types of miniminds embedded in every living human being. Miniminds representing the species can be thought of as immigrants to a foreign land, but now that they have settled in, their desires become the desires of their adopted nation that can no longer separate the needs of the immigrants and its original inhabitants. Because of this co-inhabitation and their role as the co-masters of any individual, the desires of the species and the self are bound to be balanced at the individual level, and reflected at the social level.

The law of miniminds describes something that is fundamental to who we are as humans that cannot be changed. It serves as a comforting foundation upon which the objectives of the species and the self coexist. Even if the principles of self-insufficiency and childlessness fail, the law of miniminds will ensure balance between the objectives of the species and the self, and a healthy relationship for the symbiotic duo.

The Bubble Theory

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