A Scientific Approach To

The HISTORY, PRESENT *and* FUTURE *of* HAPPINESS

INCREASINGHAPPINESS.ORG

Preface

Self-help books on happiness have a very limited scope. Their objective is to give readers tips on how they can increase their *own* happiness. While readers of this book may still glean useful insights for personal use, this is not its primary target. Instead, it is an attempt to analyze happiness scientifically—what it is, how it came about, how it can be measured—and how these insights can be used to increase happiness *globally*.

The book's ambition to be a scientific analysis of happiness posed a challenge. A serious work of scientific value often requires a style which is not perceived as enjoyable by many readers. For example, a succinct, anecdote-free and dry way of writing—so ubiquitous in the scientific world—will hardly win many hearts. Similarly, this book begins with a theoretical background without any apparent connection to happiness (which will be resolved on the following pages), requiring more patience than the average reader may have. As a compromise, this book aims to go a middle way by trying to be accessible to most, while still doing its scientific ambitions justice. You, the reader, are the ultimate judge of whether the book achieves this.

As this book takes the scientific approach, it means that every statement is up for discussion, and nothing is written in stone. Feedback, corrections, and refutations are not only welcome but the main drivers of progress. The discussions take place on IncreasingHappiness.org/book, where you are invited to contribute.

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The

HISTORY

of Happiness

Chapter One

Genesis
(Or: How it All Started)

To understand something—be it happiness or anything else—it makes sense to start at the beginning; if need be, the *very* beginning. That's because everything builds on top of each other: we live in a world of cause and effect, and understanding our current situation is only possible if we change our perspective for a short while, and take time to understand our history and where we came from. As the Chinese proverb goes, "You have to climb the mountain to understand the valley."

So, what was at the very beginning? As unsatisfying as it may be, we'll never know for sure. We weren't around at the time the world came into existence, so we cannot serve as eyewitnesses. As a first attempt to make sense of what happened, we can try to deduce, from the knowledge we have gathered ourselves, how it all happened. Unfortunately, individual knowledge is rather limited, not allowing for any conclusive deductions. That's a dead end.

Therefore, we must resort to what others say on the topic. The possible explanations that have been brought up are quite diverse. For example, some people claim that a few thousand years ago, an all-powerful God created the world to his liking (unfortunately, he wasn't too happy with everything he created and erased parts of it later, but that's a different story; actually, it's the same story but a different chapter.) Another group called *scientists* claim that it all started with a "Big Bang" a long, long time ago, when there was utter chaos, and life only evolved much later. With such different theories (and there are several more), the question is: whom to believe?

When one group tells one story, and a different group tells another, one may think it's a 50/50 choice of which to go with. However, to the credit of the scientists, their story is more than just a story. It is a methodology, which can be summarized as follows: a theory is conceived (supported by evidence) which is then exposed to attacks by other scientists, who try to disprove it. And boy, are they motivated to disprove their fellow scientist's theory. Eventually, only the theories that are still standing after the avalanche of attacks are considered as "truth"—not as ultimate truth, but only as long as no refutation is successful, or a better theory is found. This approach has proven to be very robust, and we owe almost all of our modern technology and standard of life to it. Hence, for this book, the scientific method is followed as the (relatively) best possible way we can get closer to the truth—while admitting that there will never be absolute certainty about it.

Therefore, for the time being, we can assume that it all started with a big explosion around 13.7 billion years ago[1]. What happened next? According to the theory, there was enormous pressure and heat, causing a gigantic number of particles to move at high speeds in all directions. At that time, there weren't any stable "structures" (clusters of particles), as those got quickly destroyed due to other particles cracking them up. Later, when matter spread out in space, it cooled down, and more stable structures formed, such as galaxies, planets, rocks, and so on. At some point—when exactly is still a mystery—something peculiar happened: "life" came into existence.

What's that all about? According to science, the answer is quite sobering: life doesn't exist, but is only a classification conceived by humans, describing the following situation: a structure with distinct attributes (e.g., shape, size, composition) gets exposed to external influences

(like sunlight), enabling internal processes (such as the splitting of a cell) from which another structure emerges; and this new structure is sufficiently similar to the original so that it can be classified as belonging to the same type. This sounds dry, soulless, and boring. But that's what life is, according to science. It's all human categorization. From nature's perspective, there's no fundamental difference between one set of particles and processes and another.[2]

The first forms of life were quite simple, single-celled organisms such as algae and amoeba[3], which don't require a lot of external influences. Their internal changes were also rather straightforward. Over time, more complex forms of life evolved, such as mammals. These organisms' internal processes are more multi-layered, and requirements for environmental influences more diverse (food, water, air to breathe, mate for reproduction, etc.). In any case, no matter how complex the organism is, the basic paradigm is always the same: there's a distinct structure, the organism, which is interacting with the outside world.

Modeling the World Around Us

For organisms to survive and reproduce, what happens in their environment is crucial—both to get something from it (e.g., food), as well as to prevent threats (e.g., being eaten). Because of that, organisms evolved into using external signals to adjust internal behavior. For example, some bacteria are capable of detecting light to move toward it, for photosynthesis.[4] Those methods started as very simple and immediate, reflex-type of reactions to environmental stimuli. As time passed, they became more sophisticated and complex, eventually leading to a process known as "thinking", which can be

summarized as follows: an internal model of the outside world is created, which is used to simulate possible reactions to external stimuli in a theoretical context—a form of dry runs—before choosing the option assessed as the most beneficial with the highest probability.

Incidentally, "most beneficial" in an evolutionary context means what's best for the genes' reproduction. It's neither *directly* about the organism's survival (although survival is often an indispensable requirement for reproduction), nor about the organism reproducing itself, as there are many other actions not related to the organism's own reproduction which benefit its genes. Examples include honey bees working and sacrificing themselves for the queen bee, or humans taking care of their offspring, siblings and so on.[5] Therefore, going forward nature's goal will be summarized as *reproduction*, referring to the reproduction of species' genes. Note: as in the example of *nature's goal* this book personifies nature on several occasions. However, this is only used as a rhetorical device and doesn't imply an acting agent in any way, the term "nature" is equivalent to "how things happened to come about."

The ability to think turned out to be very beneficial for reproduction, so it spread out across many species and became more and more advanced (e.g., more complex brains, allowing for more elaborate simulation processes). Despite those advances, the internal model is never perfect and not a "true" reflection of the outside world. For example, humans don't understand—on an intuitive level—the reality of the world of the very small (such as quantum effects where a particle can be in two locations at the same time[6]) or the very large (as in time moving slower at high speeds[7].) That's because we are not exposed to those aspects of the world in our

everyday lives. Therefore, they are not relevant for reproduction, and there was no evolutionary incentive to build that knowledge into our models. Furthermore, not only does our modeling fall short of reflecting the outside world accurately, but it even distorts reality on purpose. For instance, the perception of distinctly different colors helps us to navigate our environment; however, there isn't such a distinction in the real world, it's only a gradual scale of different wavelengths of light.[8]

It proved to be of evolutionary advantage that the thinking process can stretch out for long periods of time. For instance, humans may make a decision after having collected information for many years. In order for this to be possible, the individual must have the opportunity to temporarily put an active thinking process on hold, retrieve it later when more data has been collected, and simulate possible actions on an occasional basis before a final decision is made. During this phase, the individual must have the impression that they can determine the actions with free will, as evaluating possible actions only makes sense if there's the notion of having a choice. These circumstances have contributed to, or even exclusively caused, a feeling of awareness known as "consciousness".

The Emergence of a Punishment and Reward System

The evaluation of possible actions during the thinking process implies that there must be some form of assessment criteria, steering the organism towards the actions that should be pursued ("good"—keep going) or avoided ("bad"—stop it right now). To be effective, this cannot be perceived as just a guide with recommendations on what to do, but as an imperative ("you *must* do this"), as everything

else would allow the organism to ignore it. In the words of Jeremy Bentham, the 18th-century polymath: "Nature has placed mankind under the governance of two *sovereign masters*, pain and pleasure."[9]

Which actions get rewarded by pleasure, or punished by pain, is an expression of what nature considers beneficial or counterproductive for reproduction. However, the punishment/reward system isn't the only way nature steers organisms. Reflexes and all other sub-conscious processes, such as breathing and digestion, are not affected by pleasure and pain, as nature only invokes the incentive system when, according to its understanding, a decision can be made.

While pleasure and pain are the most direct—and probably strongest—parts of the punishment and reward system, they are not the only components. Over time, the incentive system expanded into various other types of emotions too, encompassing a plethora of mental states such as fear, sadness, frustration, self-fulfillment, amusement, relief, and many more, which can be perceived with various degrees of intensity. However, as far as they are relevant for the analysis of happiness and the purpose of this book, they have a common denominator: they are perceived either as "good" or "bad."

Defining Happiness

It is possible that several emotions—some good, some bad—are experienced at the same time. In that case, what is the overall happiness state of the *sentient being* (an organism capable of feeling punishments and rewards) in a given moment? For the purpose of analyzing happiness, the following definition is proposed: whether the overall

happiness state is positive or negative is determined by the sentient being's decision to re-live the experienced moment again, as an end in itself, with everything else being equal (see Fig. 1).

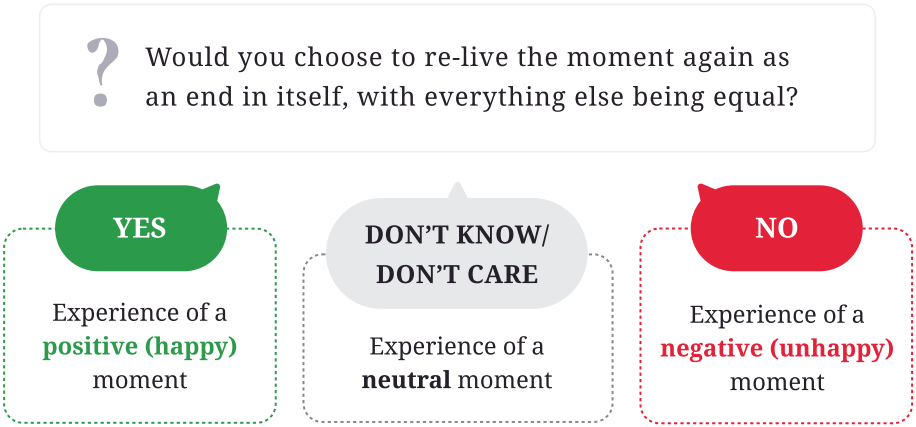

Fig. 1: The "Happiness question" as a way to determine the happiness state.

"Everything else being equal" means that there are no other positive or negative side-effects from the decision to re-live the moment. For example, re-living a moment shouldn't have a life-prolonging effect. To rule out such effects, the happiness question could be modified to ask whether the individual would want to *replace a neutral moment* with the moment for which the happiness state is being determined. For that comparison strategy to work, of course, the "neutral" moment must actually be neutral. However, that's not too difficult to determine. A moment when we are unconscious can safely be assumed as neutral, as we would be indifferent to such a moment repeating or not. So, the question becomes "If you could choose to replace a moment when you're not conscious with the moment you just lived through, would you do it?"

The happiness question isn't meant to be posed as a literal question in every case. Many sentient beings—essentially all non-human animals—lack the cognitive capabilities to understand and answer verbal questions (although they can certainly feel pleasure and pain). In those cases, their decision needs to be derived from their behavior when it's clear they understand that they have such an option. For example, if a dog that's in a neutral happiness state (e.g., lying in bed, relaxed, low brain activity, slightly sleepy eyes) is given the opportunity to play ball and gets excited, jumping up and down and unable to wait for the play to start, it can be assumed that it prefers playing ball over the neutral state, and hence it's a happy experience for the dog.

For humans, if somebody asks us the happiness question about a moment that just passed, we may not have a clear answer right away. You can ask yourself right now, would you want to re-live the last few seconds if offered to you for free? Hopefully, your answer is a resounding "yes" because you're supposed to get some joy from reading these lines. In any case, often we have to think a little about what our answer would be. This isn't so much a weakness of the proposed definition of happiness, but rather an expression of the fact that most of the time, a typical person's happiness state is neutral, or only very mildly positive or negative. This is mostly due to *soothing effects* which will be discussed later.

For the most accurate results, the happiness question should be posed very shortly after the moment has been lived through. The more time that has elapsed, the more memory has to be relied on, which is prone to errors—due to both the natural process of forgetting information and an active manipulation of the memory of previously experienced moments. For instance, when people

were asked "Looking back at your life as a whole, how happy are you overall?" the answers they gave changed if they found a few coins at a photocopy machine that the researchers had planted there.[10] Obviously, the happiness state of a moment lived through can never be changed retrospectively. Another reason for this distorted memory lies in the *fading affect bias*, i.e., the phenomenon in which memories associated with negative emotions tend to be forgotten more quickly than those associated with positive emotions.[11] In the words of Franklin P. Adams, the American columnist: "Nothing is more responsible for the good old days than a bad memory."

Also, for the benefit of accuracy, the happiness question should pertain to the shortest possible period in which we are capable of experiencing anything. These "atomic units of perception" are called *percepts* and have a duration of at least 40 milliseconds in humans.[12] However, in practice, the happiness question refers to longer periods, such as asking individuals if they wanted to re-live a whole day, week, month, or their entire lives up to the point the question is asked. This clustering and aggregation of many moments is another source of inaccuracies. Nevertheless, it's unavoidable as it wouldn't be practical, and in fact detrimental to happiness itself, to ask the happiness question after every moment lived through.

With all those potential inaccuracies, the question is: why bother trying to define happiness at all? That's because a definition is imperative if we want to analyze happiness systematically and scientifically. Without that, it's only words and thin air. Today's common definitions of happiness won't suffice, as they are often too vague and sometimes also a little flawed. For example, Merriam-Webster defines happiness as "a state of well-being and contentment"[13].

But when looking up "well-being", i.e., one of the terms that is used to define happiness, Merriam-Webster says that it's "the state of being *happy* [...]". This is going in circles, which means nowhere. A scientifically valid definition has to be clear and measurable, which the (new) proposed definition above—despite all its practical challenges—fulfills to the largest extent. The value of this clear(er) definition becomes apparent below.

It should be noted, though, that the proposed definition of happiness is only a temporary solution. Happiness is, like everything else, rooted in the physical world and at some point (probably only in the far future) it will be possible to define which constellations of particles and processes constitute happiness. However, due to the high complexity of such processes, and our limited understanding of those as of today (what exactly happens in the brain is still a mystery to us), the above definition has to suffice for the time being.

The (Uneven) Happiness Scale

The happiness question only determines if the happiness state is positive or negative. It doesn't provide an answer to *how much* the state is positive or negative. To fill that gap, the happiness question can be adjusted to "If given (positive) moment A, and (positive) moment B, which one would you rather re-live?", thereby determining which moment was perceived as more intense. Furthermore, assuming moment A is preferable, additional questions can be posed along the lines of "Given the choice between re-living *one* moment A, or *two* moments B, which do you prefer?" allowing the quantification of happiness states, which therefore could be plotted—at least in principle—onto a happiness scale.

Similarly, positive moments can be compared with negative ones if asked "If you could re-live (positive) moment A, but at the cost of having to re-live (negative) moment C, would you do it?" When comparing positive with negative moments, it becomes evident quickly that the intensity of negative moments can outweigh positive ones many times over. For example, if one lived through a minute of maximum pain, only a few may be willing to re-live it even if compensated with a much longer time, such as hours or days, in a state of maximum happiness (sexual pleasures, feelings of success, etc.). Therefore, the happiness scale is, at least for human beings (and undoubtedly for many animals too), highly uneven.

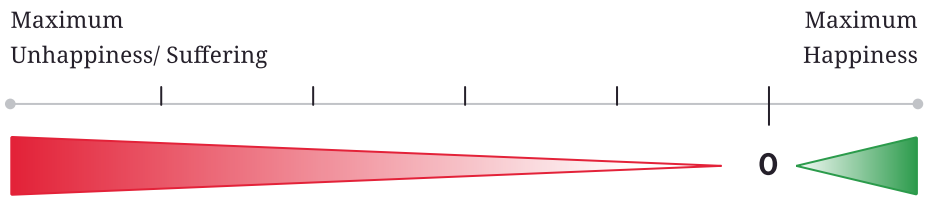

Fig. 2: The "uneven" happiness scale.

The happiness scale depicted in Fig. 2 is only symbolic and not to scale; it can be assumed that the negative part of the scale is even larger in proportion to the positive part than shown above. However, this doesn't mean that we are on average more unhappy than happy, as those are only the *potential* happiness states. We can still be overall more happy than unhappy because we may live through many more moments on the positive end of the happiness scale. Nevertheless, the fact that the happiness scale is uneven poses a major challenge in getting to the positive end of the happiness scale. (Here, as well as going forward, the term happiness is referring to the entire happiness

scale, not only the positive part of it; i.e., a reduction of suffering will also be referred to as an increase in happiness.)

Evolutionarily, there are good reasons why the intensity of negative moments can significantly surpass that of positive ones. For instance, actions such as sex are directly targeted at reproduction, and hence rewarded. However, each sexual act is only *one* attempt at reproduction with no guaranteed outcome. On the other hand, negative events such as injuries and wounds, which may lead to death, are a potential threat to *all* of our future reproduction efforts. (This doesn't only pertain to our own reproduction, but also to all other actions directed at the reproduction of our genes, such as taking care of siblings; we're of no use to anyone when we're dead.) The unevenness of the happiness scale may be a simple reflection of the fact that "more can go wrong than can go right."

Furthermore, it's always easier to teach an organism—be it survival behavior in mammals through millions of years of evolution, or training of dogs within a few hours—to avoid specific actions, rather than achieve certain objectives. That's because the latter is the combination of several actions and not just one. Hence, taking positive action is a more sophisticated process, which may have evolved more recently, and may therefore not be as well developed. However, while potentially plausible, this explanation is speculation only and needs to be further corroborated with research and experiments.

When Nature Punishes and When It Rewards

When nature is certain that the organism's actions are negative for reproduction, its decision to punish is straightforward. For those cases, there's no incentive *per se* to limit the intensity of the emotion,

as the message has to come across as clearly as possible to the acting organism. Limits may only be set if high levels of pain would have other negative effects, such as the organism becoming unable to act, or committing suicide to stop the pain.

However, steering by punishment alone doesn't always work, especially when it's about actions nature wants us to take, rather than avoid. For these cases, nature developed ways of attracting us to a specific action, as simply ruling out all other actions (through punishment) wouldn't be effective in making us choose the right one. For example, let's imagine if nature tried to steer only via punishments, in the form of electric shocks:

Individual takes an action
Nature: "No, that's not it" *zap*
Individual takes another action
Nature: "I don't think so" *zap*
Individual takes another action and asks "Am I at least getting closer?"
Nature: "Cannot tell, try again" *zap*

It's not that nature would have any kind of moral inhibition for such an approach, it just wouldn't be effective. There must be a directing force toward specific actions, which can only be solved with attraction and rewards.

For crucial actions, nature may invoke punishments as well as rewards. For example, going for longer periods without food is punished through the feeling of hunger, and getting access to food and consuming it is rewarded, both as the pain is eased (which can feel like a reward too) as well as additional, enhancing effects, such as food tasting better when we're hungry.[14]

The Shortcomings of Nature's Incentive System

Nature's assessment of whether an action is conducive or adverse to reproduction is the result of millions of years of evolution. The benefit of this long history is that it can draw on a lot of trial-and-error experience in determining which actions are most beneficial for reproduction. However, the drawback is that new developments cannot be incorporated quickly into the incentive system. The agricultural and industrial revolutions changed our way of life fundamentally in a very short period of time (by historical standards), and nature's incentive system is very slow to adjust to the new circumstances. For example, we are rewarded for eating sugary and fatty foods, driven by the historic scarcity of crucial calories. If nature "knew" that food is now available—for many—in abundance, and eating low-quality food makes us overweight, reducing our fertility[15], shortening our life expectancy[16], as well as posing risks for our offspring[17], we would experience severe pain every time we bit into a cookie. Another, even more extreme, example is the consumption of hard drugs. The direct reward in terms of short-term happiness could not be higher, yet the effects on our capability to reproduce (risk of quick death) couldn't be more disastrous.

This inflexibility doesn't only make it difficult to adjust to recent developments, but also to discern between different situations. Medical operations can be crucial for survival but are often accompanied by pain. If nature had a better understanding of the situation, it would reward our decision to undergo treatment, not punish it. However, the rules set by nature are broad and general, and cannot take specific circumstances into account. Furthermore, even though the incentive system's original purpose is to make the individual behave in a certain way, in some cases nature keeps punishing way

beyond the individual's opportunity to influence the situation. For example, the pain perceived by a wildebeest being eaten alive by a hyena, without any chance to escape, doesn't increase the wildebeest's chance for survival. Nevertheless, the pain doesn't stop (and unfortunately, high levels of pain don't always lead to unconsciousness). There are endless cases like this, and the more we know about nature, the less we believe in its good nature. Charles Darwin himself lost faith in it by learning about cases like the female digger wasp which lays her egg in a caterpillar so that her larva can feed on it. The caterpillar is paralyzed but not killed so that the meat stays fresh, which may make the prey aware of being eaten alive.[18]

In summary, nature's punishment and reward system can be described as inflexible, outdated (with respect to humans), undifferentiated, callous, and merciless.

Soothing Effects

In some cases, nature does understand that continued rewarding or punishing is pointless. This is especially the case when no changes happen to the situation which is regarded as good or bad during long periods of time, despite the rewarding or punishing. For example, Brickman and Campbell[19] analyzed the happiness development of people who experienced either very positive (winning the lottery) or negative (being paralyzed) events. Surprisingly, not only did the intensity of the happy or unhappy states diminish over time, but it eventually reached the neutrality line again for both groups (see Fig. 3).

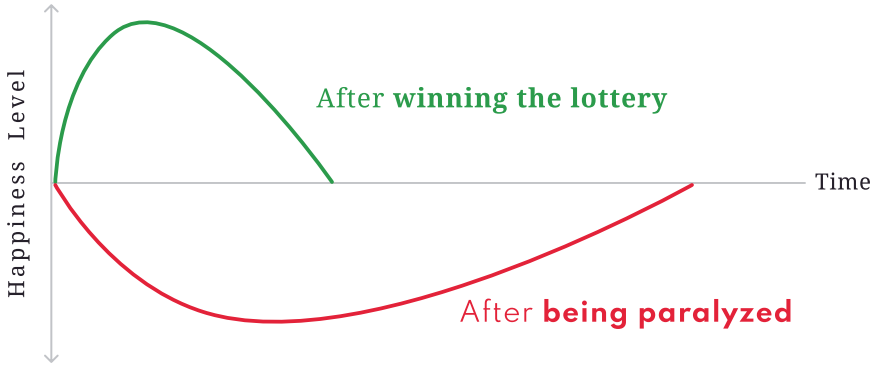

Fig. 3: Happiness gravitates towards neutrality over time.

This effect is also called the *hedonic treadmill* as it suggests that no matter what we do, we'll always end up in the same (neutral) state. However, this isn't entirely true; not everything happening to us will be irrelevant after a while. Later studies showed that lottery winners are still somewhat happier after some time.[20] Also, the sadness over the loss of a loved one, for example, may not be entirely neutralized even after a significant amount of time has passed. The saying "you'll get used to everything" isn't always accurate. What's true, however, is that soothing effects exist, taking the edge off both good and bad feelings over time.

A possible explanation for these effects is that nature gets the feedback that continued rewarding or punishing doesn't bring any changes, accepts the situation as a new reality, and adjusts to a new baseline. If it didn't, the punishment and reward system would decrease in effectiveness, as it would be diluted and distracted with punishments and rewards that have proven to be ineffective. This also explains why the answer to the happiness question ("Would you decide to re-live the moment you just lived through, as and in itself?") is very often neutral, as mentioned above.

When attempting to analyze happiness scientifically, it's natural to look for parallels in other areas of science. In physics, an object doesn't feel a force if going at a consistent speed, no matter what the speed is, provided there's no friction, i.e., in a vacuum (for example, we don't realize that we're whizzing around the sun at 67,000 miles per hour right now.) Only a change of speed, either acceleration or deceleration, has a noticeable effect on the body. Albeit far from being identical, happiness has some parallels to this: while we get used to steady circumstances (speed) we especially feel changes to the status quo (acceleration or deceleration).

Soothing effects can occur over several months, as in the examples above, or much quicker: the feeling of hunger, for example, can diminish within a relatively short time frame, even without eating. That's because nature understands that a lack of eating despite the punishment of hunger means that the individual cannot do anything about it at that moment. It's as if nature says "Okay, I get it, you cannot do anything about it right now, so I'll stop the punishing. I'll ping you again in a while though." Similarly, continued exposure of an individual to events that are initially assessed as highly positive (tasty food, caffeine, etc.) reduces the rewards over time. This effect is also known as diminishing returns, or inflation of needs.

It's Interpretation, Not Circumstances

For the perception of pain and pleasure, it's not relevant what happens to us per se, but how the brain interprets it. For example, the destruction of body tissue, such as through a knife cut, doesn't always cause pain, such as when we are unconscious. And how can we be sure we don't feel pain in those cases? First, we don't have the usual pain

reactions. Secondly, severe pain could lead to long-term consequences such as traumas, which are not observed. And thirdly, it wouldn't make much sense: the reason for the punishment and reward system is to influence our decision-making. If, however, we cannot make decisions because we are unconscious, there's no point in punishing or rewarding.

Pain can also be suppressed by the brain in situations where it would negatively impact our decision-making. For example, we may not feel our sprained ankle when running away from a lion. Similarly, soldiers with severe injuries in wartime, or even with the loss of a whole limb, sometimes report little or no pain.[21] Hence, the frequent statement that pain is an expression of the body being in danger isn't entirely accurate. In cases such as a soldier not feeling the pain from a missing limb, it can be assumed that the brain is well aware that the body is in danger, it just assesses that pain in this situation would negatively impact decision-making. Therefore, a more accurate statement is that pain is caused when nature thinks we should take a certain action, but we don't.

The more what happens to us can be linked to required decisions and actions (as per nature's understanding), the stronger the intensity of the emotions tends to be. In one study, it was shown that pain can be stronger if *deliberately* inflicted[22], which can be explained by being linked to a specific action: since there's the option of trying to stop the perpetrator from causing pain, nature will make this pain feel stronger to lead us to that action.

The perception of pain (this is a tautology: pain already implies that it's perceived) may not require internal stimuli at all. For example, pain in areas where amputated body parts used to be, also called

phantom limb pain, isn't caused by actual damage to the body, but entirely by the brain's incorrect interpretation of the situation. It's important to understand that such forms of "irrational" pain are just as real as any other forms of pain, and therefore shouldn't be belittled. It's solely the brain's interpretation that matters.

Who Can Feel Happiness?

To understand which species can experience pleasure and pain, it makes sense to start from square one: how do we know other *people* can? Behavior plays a key role. If something is painful, humans make it abundantly clear through shouting, crying, retracting, and so on; and from a certain age, we can verbalize it, too ("Mom, this hurts!"). In all those cases, information is being sent out, expressing emotions. And on the other side, there needs to be a second individual who receives and understands this information. We (as humans) pick up others' emotions easily, as their behavior is familiar since we express ourselves in the same way. Also, we developed this skill through evolution: humans are social animals, and understanding how others feel can be crucial, such as a mother understanding if her child is well. (This might explain why women tend to be faster and more accurate than men in recognizing facial expressions.)[23]

The first challenge in understanding how other species feel is that there may be very limited information sent out, or even none, as when there's no evolutionary benefit to conveying this information. Furthermore, there may be reasons for species to actively withhold it. For instance, rabbits are known to avoid showing pain to prevent being singled out as a target for predators.[24] Secondly, even if a species expresses pain, it might be in ways that humans don't understand.

Mice convey pain to other mice via scent which cannot be detected by human smell.[25] This means that our intuition and instincts aren't always reliable sources for assessing other species' emotions. Scientific processes have to be applied to assess the capability of feeling pleasure and pain, including both direct ways (detection of a nervous system and pain receptors, brain composition, brain waves, etc.) and indirect ways via deductions (avoidance of certain situations, behavioral abnormalities[26], physiological responses[27], time gaps between stimuli and reaction which may imply thinking and feeling, etc.).

Research into which species can feel pleasure and pain is still in its infancy, but it seems to apply to a wide range, potentially even to insects[28]. The farther away creatures are from ourselves from an evolutionary perspective, the harder it is to determine what they feel. However, it's beyond doubt that many animals possess sophisticated mental faculties making them capable of feeling pleasure and pain.

And What About the Intensity?

The approaches above aim to determine if non-human species can feel happiness (at all). Concerning *intensity*, it can be assumed not to be weaker than what humans can feel, especially pain. This is because, as outlined above, it must be perceived as imperative. For species closely related to humans, such as other mammals, assessing their emotions' intensity is straightforward in many cases, as their mechanisms to process it are biologically identical to ours, and they also express them similarly. A knife cutting into flesh causes a very similar experience among all mammals as they share the same nervous system, neurochemicals, and perceptions.[29]

Nevertheless, there are differences in how humans experience happiness compared to non-humans:

- **A larger variety of emotions**: the more an organism relies on thinking and complex action-taking, the more multi-layered the punishment and reward system can be assumed to be. Feelings like betrayal, jealousy, or self-fulfillment most likely only occur in sophisticated organisms. Whether those lead to an overall increased level of happiness is difficult to say. On one hand, for some emotions, it can be assumed that the effects causing the unevenness of the happiness scale also apply (i.e., "more can go wrong than can go right," so they are mostly negative). On the other hand, there are also advanced mental states, such as the enjoyment of music or humor, which almost exclusively have a very strong, positive impact.
- **Risk of overthinking**: A source for mostly negative experiences lies in the fact that advanced cognitive capabilities sometimes take on a life of their own and go beyond their original purpose, leading to excessive worry, depression, and other mental issues. The strength of those emotions can be deduced from the fact that in some cases, they cause individuals to commit suicide, and hence overcome the will for survival, which is one of the strongest drives we have.
- **Better memory**: More powerful cognitive capabilities are also often accompanied by a better memory, making emotions last longer. For example, humans can still be sad, angry, or pleased about events that happened many years ago. The human lifespan—which is long compared to most other species[30]—further extends this effect.
- **More options**: Individuals with more powerful cognitive capabilities have more options at their disposal, increasing

the probability that a happiness-maximizing choice is taken. However, a contrary effect is that with more options, the probability of not picking the best option increases, resulting in cognitive dissonances which are mostly perceived as negative. This effect is also known as the paradox of choice.[31]

- **Further developed reward system**: As mentioned earlier, rewards are the more sophisticated part of the punishment/reward system. Therefore, it could be that less developed species, provided they are conscious, are steered by pain to a larger extent than by pleasure. However, this is speculation only and requires further research.

In summary, no definite statement is currently possible on whether non-human species can suffer more or less than humans based on their genetic predisposition alone. While it's important to further explore this, in practice two other factors play a more significant role when it comes to how much pain is endured overall: the organisms' specific circumstances, as well as the number of affected individuals. This will be further elaborated below.

Caring for Others' Happiness

Nature's incentive system always applies to the individual alone because it is the individual who is thinking and making decisions. This means that in the first step, individuals are striving to maximize their own happiness and disregard that of others. This refers to a *logical* first step, it doesn't mean that selfish behaviors take effect before selfless ones. Our actions can be a mix of both, originating at the same point in time.

Over time, effects evolved which made us care for others too. One example is *empathy*, which is the ability to understand, and to a certain extent feel[32] others' emotions. This often results in an urge to help others, although not always: Empathy can be paralyzing (a witness of an accident may be too overwhelmed to help out), used for nefarious purposes (reading someone's emotions allows manipulators or psychics to deceive) or even be a requirement for committing atrocities (psychopaths need to understand what their victims are feeling to get pleasure from torturing them). However, those are exceptions; empathy does mostly lead to more helpful behavior.

The more similar others' genes are to ours, the stronger the urge to help. For identical twins, who share 100% of genes, it's typically the strongest, linearly declining for fraternal twins (50% shared genes on average), full siblings (50%), and half-siblings (25%).[33] This makes sense because as outlined above, from nature's perspective it's about making us behave in a way that isn't only good for ourselves, but our genes.

Helping others can also directly benefit us, as we can expect to receive the same in return. The power of reciprocity can be very strong.[34] In addition, social behavior and "doing good" can increase chances for reproduction, as they can be seen as a strong indicator to possible mating partners that we are willing to care for them, as well as for our offspring.[35]

Nature seems to regard social behavior as important, at least among humans, as it invokes both sides of its incentive system: we feel bad when we omit helping others in dire need, and good when we help. In fact, helping others is often stated as one of the most long-lasting and satisfying sources of happiness.[36]

However, while those factors can be strong motivational drivers to help others, this isn't always the case. It depends on genetics, how we are brought up[37], which experiences we have had in life, as well as the specific circumstances we are in when we make a decision. Specific circumstances are probably the most crucial ingredients of whether we act socially or not. Classifying people as "good" or "bad" (where we naturally think of ourselves as the good ones) is questionable as our state of mind can vary significantly, and empathy and compassion—or the lack thereof—with it. In any case, empathy is too volatile and frequently too weak to consistently prevent egoistical decision-making. As this could bring devastation to society overall, humans have developed a system of laws and external punishment as a deterrent. This forces people who lean towards anti-social behavior to stay in line, and confirms all others in their decision to stay social as well.

Social behavior often looks selfless on the surface but is rewarded, for example by feeling good for helping others. However, that's not always the case. A mother who gives her life for her children doesn't only do so because she would feel bad otherwise; she does it because it benefits the survival of her genes. Therefore, while genes may be "selfish", on the level of the organism, which is where happiness occurs, purely selfless behavior does exist.[38]

Furthermore, altruistic behavior can be observed even when there's neither a benefit for the individual nor its genes. For example, soldiers sacrificing their lives for their comrades in situations where they are not forced to isn't as easily explained as the mother and child example, as there's no benefit for their genes.[39] Reasons for purely altruistic behavior may lie in nature's inability to adjust to specific circumstances, similarly as described above for pain: nature recognized social behavior as beneficial, and therefore rewards it.

However, it also takes effect in situations where there are not any benefits to the individual's genes. Such spillover effects may also happen from social conditioning. We learn social behavior through an external punishment/reward system, but it still impacts our behavior in the absence of any punishment and rewards, as the individual internalized it as a general rule of how to behave.

The feeling of compassion can also go beyond our species; however, it decreases in intensity when the evolutionary distance increases, as shown in Fig. 4.

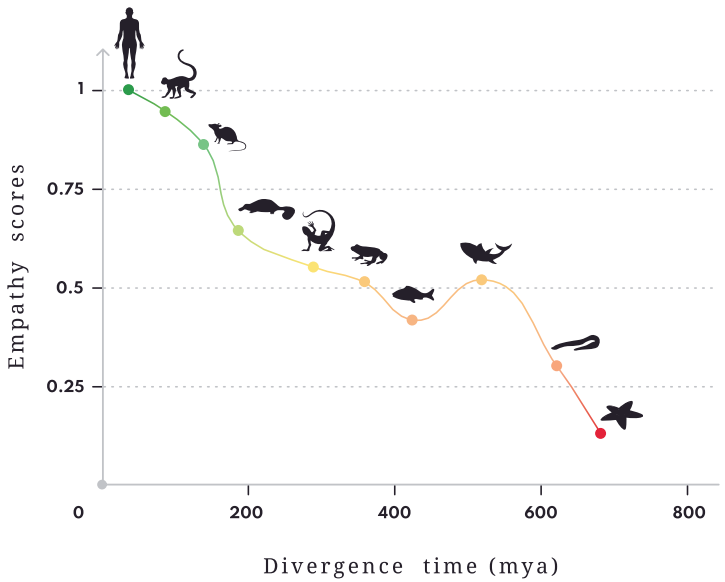

Fig. 4: Empathy and compassion toward other species decrease with evolutionary divergence time (Miralles, A. et al.).[40] Methodology: Raters were given pictures of different animals and asked questions to assess their empathic perceptions or their compassionate reactions (for example "If these two individuals were in danger of death, I will spare the life of [choice among a pair of pictures] as a priority".)

Not only is it relevant for our compassion how distant other species are on a factual, genetic level, but also by how similar we *perceive* them to be. For example, the 1995 movie *Babe*, which featured a speaking, humanized pig, lead to a surge in vegetarianism and compassion towards pigs.[41] This effect may still be explained genetically, albeit indirectly: since determining the genetic similarities via DNA testing before taking action would neither have been possible in the past, nor be practical nowadays, we just assume that what looks similar to us also shares our genes. This feeling of belonging to a group, and increased level of care towards members of the same group, can be observed in many instances, from the selection of friends with similar physical traits[42] to children acting more collaboratively towards those wearing t-shirts with the same color.[43]

Consequently, empathy tends to be low towards species that are evolutionarily and genetically far apart from ourselves and don't resemble us. Additionally, in those cases all other factors that would make us care about them are also weak, as we cannot expect reciprocity, there are no possibilities of mating, and there are mostly neither hard external incentives (such as laws) nor soft ones (such as social pressure) which would increase the level of caring.

Our Heritage

Summarizing and expanding on the points previously discussed, there are three circumstances that are major obstacles to increasing happiness and can be regarded as the "fate of the world":

1) Happiness isn't nature's goal

Happiness is an evolutionary side product to steer us to do what's good for our genes' reproduction. Nature doesn't care for it per se, and would, if given the opportunity, impose unlimited suffering upon organisms if it was beneficial for their reproduction. Fortunately, nature isn't given that option, but the fact that happiness is only a means to an end inhibited it from systematically increasing through evolution.

2) Negative emotions can be much stronger than positive ones

The unevenness of the happiness scale makes it an uphill battle. Before we can think about getting to the positive end of the happiness scale, we need to neutralize and avoid the risks of (severe) negative emotions. And if we fail, compensating for such negative emotions with positive moments in the future can be difficult, take a long time, or be outright impossible.

3) Organisms can only perceive their own happiness

Happiness is always a subjective feeling. It can never be objectivized or felt collectively; we cannot get out of our skin. Therefore, organisms are primarily incentivized to maximize their own happiness. Counteracting effects, such as empathy, are comparatively weak and fragile.

However, there are also three positive circumstances:

1) Nature doesn't aim to reduce happiness

While happiness isn't nature's goal, nature also doesn't strive to actively reduce happiness (except for soothing effects, which are

comparatively weak). Therefore, nature's indifference to happiness can also be good, depending on the situation.

2) Suffering is limited (by death)

From the perspective of an individual, suffering isn't unlimited: death is always the end of it. Death is a state of neutrality with respect to happiness, as we would be indifferent to a moment repeating when we don't exist.

3) Happiness can be engineered

Happiness, like everything else, is rooted in the physical world and a constellation of particles and processes. Therefore, it's possible, at least in principle, that we can influence, maximize and re-create it in artificial ways, as will be discussed later.

Happiness

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PRESENT

Chapter two

Advances in Human Happiness

Judging from the number of happiness and self-help books on bookstore shelves, happiness is people's primary goal. It wasn't always: before the Enlightenment starting in the 17th century, humans weren't at the center, and the main objective—for many—was to serve God and behave in a way that maximizes chances for a blissful afterlife in heaven.

Although looking closer, maybe the afterlife was not the only motive. Living conditions were rough throughout history, and bearing the yoke was easier believing that it would all turn around one day. In other words, religion increases happiness by focusing on reducing negative emotions, which is always a priority due to the unevenness of the happiness scale.

However, with improved living conditions the need to focus on soothing negative emotions faded (the wealthier the nation, the less it tends to be religious[44]), and we began to enjoy the luxury of turning to the positive end of the happiness scale. This change was especially fueled by the industrial revolution, driven by science and innovation, which led to dramatic enhancements along many dimensions (see Fig. 5).

We easily forget how staggering those advances are, mostly because of a lack of emotional comparison—we haven't experienced the living conditions from hundreds of years ago ourselves—as well as taking improvements during our lifetime for granted quickly, due to soothing effects. Also, the media is painting a much darker picture of the world than justified, a trend that seems to be intensifying.[45] This is mostly because negative happenings are more spectacular and

newsworthy, while the main drivers of progress are often gradual. As pointed out by Max Roser, newspapers could have had the headline "Number of people in extreme poverty fell by 137,000 since yesterday" every day in the last 25 years.[46]

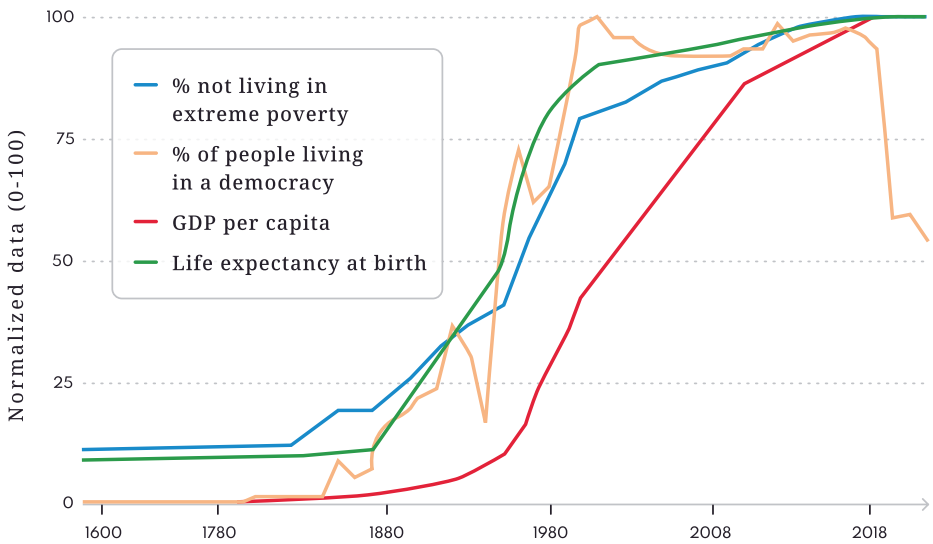

Fig. 5: Improvements in human living conditions (normalized data).[47] The recent dip in the percentage of people living in a democracy is mainly due to a decline of democratic regime characteristics in Brazil, India and the United States.[48]

The above-displayed improvements are only the tip of the iceberg of how the world is getting better (for humans). In combination with many other factors like modern technology, medical advances, a significant reduction of violence and wars (the probability of getting murdered plummeted from a historical 15–60% to around 0.008% today[49]), better education, more leisure time, reduction in global hunger, declining child labor, and many other factors[50], the average

life is as happy as never before. Today, a person on social welfare in a first-world country can have a better life than a king 300 years ago.

The improvement in happiness is mostly reflected in happiness surveys as well. A study showed that in 45 out of 52 countries, happiness increased between 1981 and 2007.[51] This is confirmed by more recent studies as well.[52] However, there are exceptions. In the United States the proportion of people who tell pollsters that they are happy has remained steady for decades.[53] Why is that? Soothing effects may look like the obvious answer, but the real reason is probably a flaw in how those surveys are conducted. The question they ask is "How happy are you with your life?", which leaves the definition of what happiness is to the person being asked, making it a variable and moving target. Respondents then ask themselves "How happy shall I consider myself to be?" which naturally makes them compare themselves with the world they see around them. Like this, no matter how many improvements there are for society overall, the proportion of people stating that they are happy will never increase. It may even decrease, for example, if social media focuses on all the ostensibly perfect lives of other people, making people think they're the unlucky ones.

The correct line of questioning to determine someone's happiness state, as mentioned above, would be to ask if they wanted to re-live e.g., the last year if offered for free. And if the goal is to determine *changes* in happiness, the question would be if they wanted to re-live the last year of their lives or a year 50, 100, or 500 years ago. Admittedly, "re-living" a life never experienced is quite hypothetical, but only this type of comparison would measure actual progress. Without a doubt, if people are made aware of how tough life used to be, they would mostly prefer to re-live their recent lives, rather than ones in the far past. In light of this, it can be stated that the average human's happiness has increased—by a lot.[54]

Our Relationship with Nature

With humans seeking and succeeding—on average—at increasing happiness, it raises the question of what that means concerning our relationship with evolution and nature. After all, happiness never was nature's goal. Furthermore, not only do we prioritize happiness, but we do so at the direct expense of reproduction: we eat food with unnaturally high sugar levels, making nature believe that we take in crucial calories for survival, but worsen our survival and reproduction capabilities. We enjoy sex with contraception, getting rewarded for what nature believes is reproduction; or we decide to have fewer children for the benefit of enjoying more of our hobbies. We trick nature all the time.

On a societal level, the results can be seen in overall population statistics. In several developed countries like Japan, the population is already decreasing[55], and it's estimated that the global peak may be reached this century, and subsequently decline[56]. If nature was aware of those developments, it would be enraged, but nature is blind to it and could not punish us even if it wanted to, due to its inflexibility.

In this respect, we exhibit an utter disregard for nature. We also disapprove of many other happenings in nature. Natural catastrophes, such as the tsunami in 2004 that killed over 200,000 people[57], are acts of nature in their purest form. Despite this, many people would still describe nature as something inherently good and worthy of protection. Why, otherwise, do we welcome efforts to prevent environmental pollution, stop global warming, save species from extinction, or simply enjoy a walk in the woods? The answer may be a bit unromantic. In the end, we'll be the ones suffering if we don't take

care of our environment.[i] Pollution and contamination cause diseases among humans, global warming leads to a wide range of issues from natural disasters to droughts and higher sea levels, and a decrease in the number of species have direct negative effects on *our* food sources[ii], *our* health[58], as well as on many other aspects of *our* well-being. Species becoming extinct also causes a deep level of sadness—within us humans, that's the point—due to the death-like experience of parting from entire species of fellow creatures, which is, as of now[59], irreversible.

Incidentally, concerning the extinction of species, it should be noted, in the defense of humans, that for the most part, we're innocent. Our alibi is quite watertight: we weren't around when most of the extinctions happened. It's estimated that by the time Homo sapiens arrived around 200–300,000 years ago, already more than 95% of the species which ever existed were extinct, due to lack of food, meteors hitting the Earth, and many other natural reasons.[60] As far as the extinction of species is concerned, nature itself is the biggest killer.

Should the view that we disregard nature and do what's good for our happiness be criticized? The alternative would mean assigning an intrinsic value to natural processes, which are, after all, only random developments[iii]. To take this alternative view would mean to declare nature as something holy—but on what evidence would

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i This doesn't imply individual egoism; quite the opposite, as environmental changes are often slow (compared to the human lifespan), protecting the environment is mainly for future generations and therefore, at least on the level of the individual, an altruistic act.

ii Examples include extinctions (e.g., of the mastodons 10-11,000 years ago), near-extinctions (e.g., of the Great Plain bison at the end of the 19th century) or diminishing of population numbers (e.g., of bees, impacting honey production).

iii Randomness in this context refers to the absence of any guiding, non-physical forces, and is neither related to the fact that on a higher level, structuredness and predictability exist,

that be founded? Having said that, it may be useful to declare nature as something worthy of protection as a general rule. This wouldn't mean assigning any intrinsic value to nature but it is solely due to the practical implications of not protecting it. This important difference between theory and practice will be elaborated on below.

It may be pointed out that actions taken for the protection of our environment are especially directed at reducing, or reversing, the initial causes of unfavorable developments created by humans, such as the reduction of CO_2 emissions. However, the reason for that isn't because human-induced changes have to be regarded more critically per se, but because those are much easier to adjust than other causes. We would try to reverse unfavorable developments in the same way if those were natural.

Fortunately, as we are a product of nature and made to live in the given environment, typically, if nature does well, so do we. Most of the time—as in deep friendships or the joy of becoming a parent—humans' and nature's goals are aligned. However, when they are not, humans today don't succumb to nature, but do what's in their interest.

Happiness vs. Life

As in the case of protecting nature and practicing religion, many of our actions have happiness as the end goal, even though it's not always obvious at first sight. But do they always?

nor is it related to the question whether the world is deterministic or a range of probabilities on a fundamental level.

One type of situation where people are striving for goals other than happiness is when it comes to survival. Let's imagine a situation where a person is confronted with a terminal illness with a few months left to live on life support, and it's beyond doubt that the remaining time will be painful, leading to an overall negative happiness balance. Some people would decide to live through to the end and not switch off life support, whereas the latter would, from a pure happiness perspective, be preferable.[i]

But how firm is their decision? What if they die after a few months, and then, a miracle happens—they are back to life, but unfortunately, in the same situation as before: terminally ill, with only a few (painful) months to live. What will their decision be this time? Assuming it's the same, this "game" could be re-played over and over. At some point, would they not ask themselves: what's the point? Who would choose eternal unhappiness?

The pro-happiness choice seems to become more popular, as can be seen in statistics about assisted suicide (see Fig. 6). This trend isn't as new as it may seem at first glance. In the 5th to 1st century BC, the attitudes towards active euthanasia tended to be more tolerant: Ancient Greek and Roman physicians frequently offered suicide drugs to their patients.[61] The change came with religions that regarded suicide as interference with God's will, associating suffering with a divine purpose. Hence, the recent developments can be seen as a "Renaissance"—of the macabre kind of course, but a Renaissance nonetheless.

i This assumes a *ceteris paribus* state where other potential effects are not taken into account (for example, the affected individual may still perform an important role for relatives, impacting their happiness; or it may lead to an erosion of the value of life in society, having other negative consequences). Whether switching off life support would actually be positive or negative with respect to overall happiness would first need to get analyzed in a practical context. More about this principle further below.

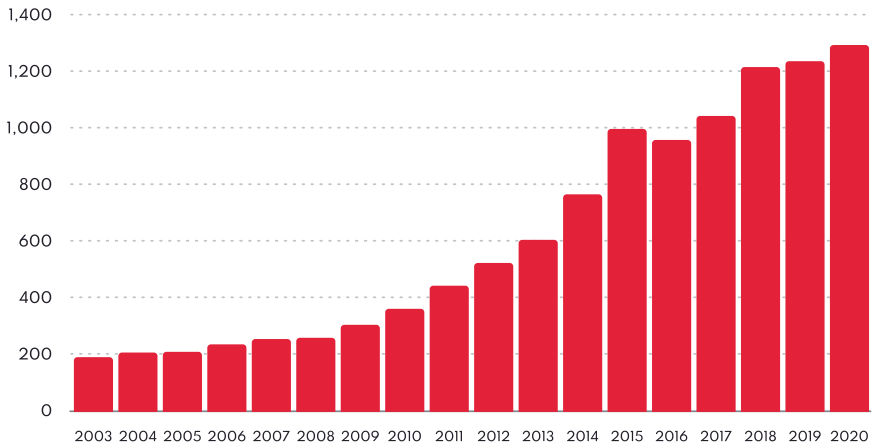

Fig. 6: Number of assisted suicides in Switzerland.[62]
This is representative of developments in other countries.[63]

In any case, the decision is rarely an easy one. The strength of the survival instinct has obvious reasons from an evolutionary perspective and can be beneficial for happiness as things may brighten up again. On the other hand, it can also result in a "survival instinct happiness trap" where individuals are kept in a prolonged state of unhappiness with unnecessary suffering.[i]

i Apart from its obvious direct positive impact on survival, maybe the survival instinct is also so strong because it had to take into account exactly this scenario; if it was weaker, the organisms may give in to their suffering and commit suicide. In other words, the survival instinct happiness trap may not be a coincidence, but the survival instinct became stronger because of the possibility of suicide, thereby keeping the upper hand, and exacerbating the situation (from a happiness perspective).

Happiness vs. Other Goals

Another instance where we don't strive for happiness—at least not directly—is when we act according to rules and laws that society has created, such as *thou shalt not kill, thou shalt not steal*, and so on. However, the obvious question is: are those not also rooted in maximizing happiness? If we keep asking for the *why*, does it not eventually reveal that it's for happiness' sake too?

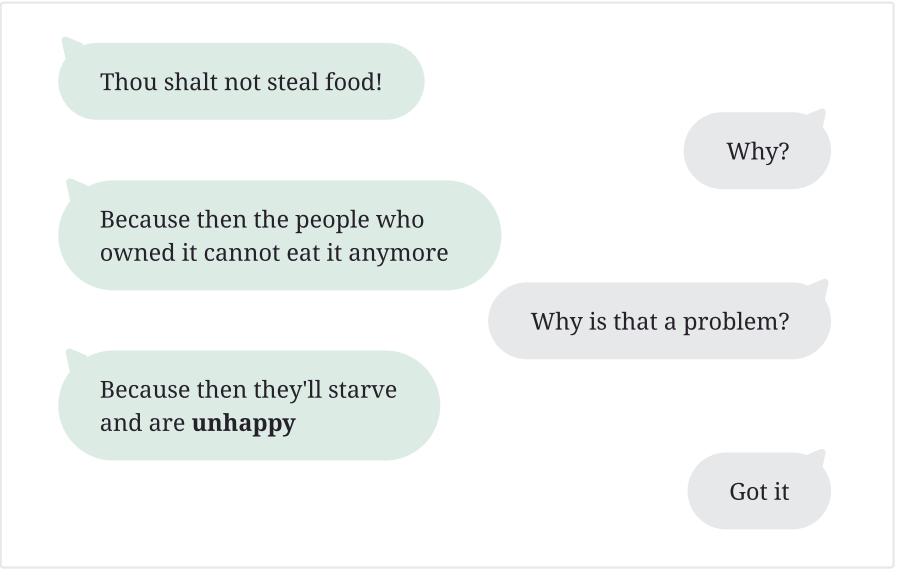

Fig. 7: Happiness as the final goal for rules and laws.

As mentioned above, in some cases, it may be required to continue the discussion a little further:

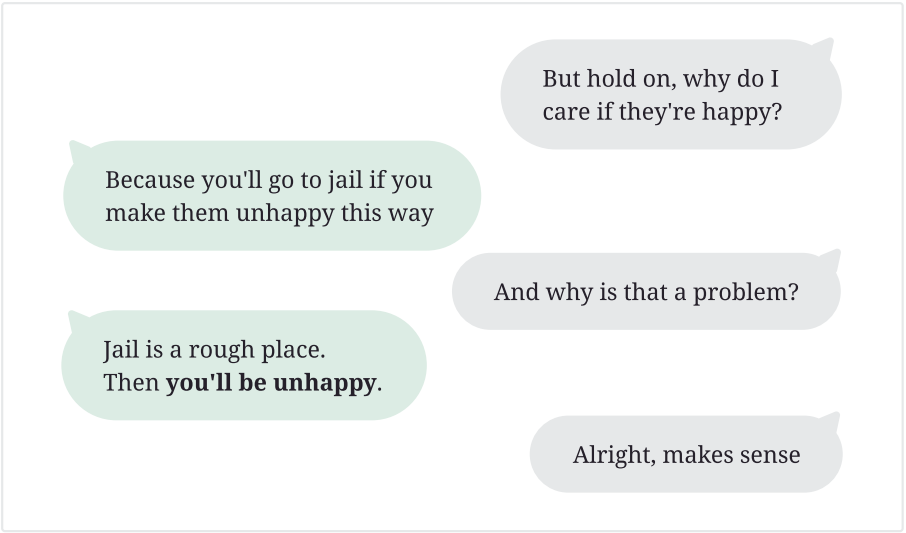

Fig. 8: More convincing is needed in some cases.

Most rules, no matter if government law, religious law, or any other forms of social rules (which include *values* such as friendship, honesty, respect for others, etc.), are rooted in maximizing happiness. The comparatively few rules which are not entirely rooted in happiness reflect that on an individual level, happiness isn't always pursued as an exclusive goal. For example, the will to live, while often closely correlated, isn't identical to happiness, and that finds expression in rules as well. After all, rules are mostly an extension, abstraction, and generalization of goals on an individual level.

For rules to work, they need to be remembered and understood by community members. For that, they have to be *few and simple.* This doesn't imply a disparaging view of the average person's mental abilities; the main reason why rules must be simple is that decisions

are often made quickly, and no matter how mentally capable the acting individual is, it will not be possible to stick to rules if they are complicated, and there's not much time to decide.

The fact that rules must be few and simple means that they cannot accommodate different scenarios for a more refined steering of behavior, which would be—in theory—conducive to achieving happiness. For instance, the ticking time bomb scenario raises the question "Should torturing a terrorist be permitted to retrieve the information where a bomb is located so that it can be deactivated and significant suffering is prevented?" While in theory such actions could reduce overall suffering in this specific case, applying such actions in practice, thereby violating the fundamental law against torture, may have other adverse effects that may eventually lead to even more suffering. Rules such as "torture is forbidden, except in cases A, B, and C" are too complex and may be misconstrued as permitting torture in many other cases too. While this *slippery slope argument* is prone to misuse, it can be valid in a practical context[i], which will be discussed in more detail.

Coming back to the question of whether only happiness is pursued: other goals, such as adherence to laws and values, do play a role. Yet they are mostly linked to happiness too, and the fact that they don't always seem to be is solely due to the practical circumstances that more differentiated rules may be too complex and have adverse effects on happiness. In other words, for the sake of happiness, rules are not always directly linked to happiness.

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i Ironically, it is especially valid if used by those who would indeed not be able to differentiate between the scenarios, and can therefore be described as a self-justifying opinion: it is correct, however only if you believe it and act as if it was correct.

In conclusion, human actions today pursue happiness as an almost exclusive goal, with a few exceptions such as striving for survival and reproduction, even though in those cases the overlaps to happiness are often strong.

Caring for Other Humans' Happiness

If donations are any guide, people seem to care more and more about others' happiness. In the US alone, donations increased more than 7-fold within the last 60 years (see Fig. 9).

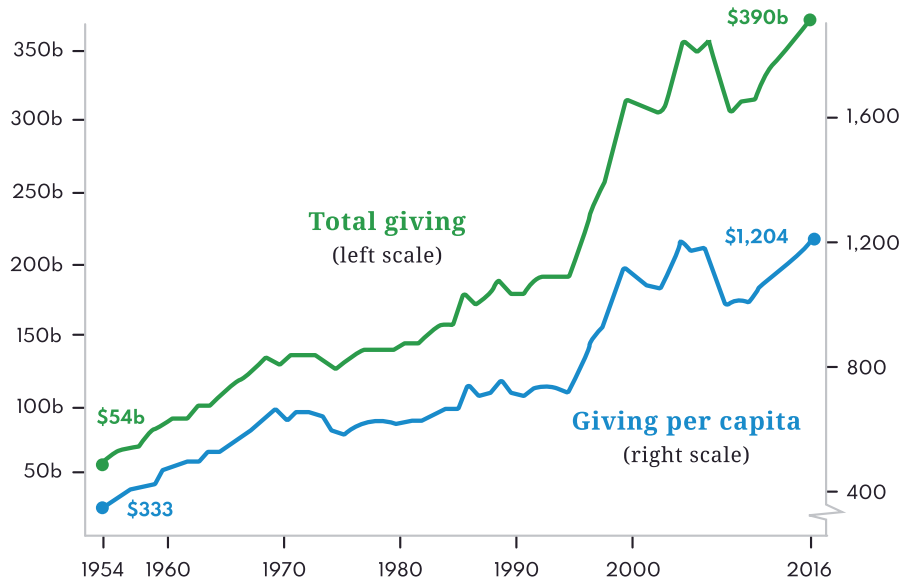

Fig. 9: Increasing donations in the United States reflecting more care for others. Graph adapted from Giving USA; U.S. Bureau of the Consensus; CPI inflation adjustments to 2016 dollars.

Globally, the trend seems to be similar. It applies not only to total money donated, but also in terms of what percentage of people give, how often they help strangers in other ways, or how much time they volunteer.[64]

Why do people care more and more for others? It's important to understand the drivers for giving, as they can be levers to increase giving even more. They include:

- **Fewer personal problems**: More people are now on the positive end of the happiness scale, giving them the freedom to move their attention from fixing their own issues to helping others. They can also enjoy the rewards of giving more as they are not overshadowed by their own issues.
- **More wealth**: With people earning and owning more, there's more to spend.
- **More opportunities**: The number of charities is increasing constantly[65], giving more opportunities to donate.
- **Longer lives**: Life expectancy is rising, and emotional empathy increases with age.[66]
- **Fewer children**: Fewer offspring means that wealth cannot be passed on to the next (own) generation, and may instead be donated.[67]
- **Higher visibility**: The media makes it easier to become aware of others in need, triggering the urge to help.
- **Social recognition**: Doing good is more and more thought of as noble, which gives the donator a direct reward as well.
- **Changing mindset in society**: Younger people tend to be more connected with societal issues and empowered to turn the world into a better place: Millennial entrepreneurs are twice as generous with their money and time than Gen X and Baby Boomer entrepreneurs.[68]

- **Re-enforcing effects**: The more people donate the more others want to follow them too and participate in the trend.

An increased life expectancy can also contribute to more social behavior due to reciprocity. The saying that you meet everybody twice in life is a myth, but the longer we live, the likelier it is to happen. During most of history, when life expectancy was much shorter than today[69], the incentive for a "hit and exit" strategy (perhaps by waging wars to get into the history books as quickly as possible) was stronger. If everyone could expect to live 2,000 years, behavior would most likely be much more social.

Caring for Other Species' Happiness

Several developments show that humans are caring more and more about non-humans too. Those include:

- Increasing number of pets.[70]
- Animal welfare is sometimes stated as among the top important causes for giving[71] (while actual giving for this purpose is still relatively low.[i])
- Significant decrease in the euthanization of animals in shelters.[72]
- Strong increase in vegetarianism and veganism.[73]
- Increase in animal rights laws.[74]

i "Around 97% of philanthropic funding in the US goes towards helping humans. The remaining 3% is split between the environment and animals. Even *within* the funding spent on animal welfare, only 1% goes towards *farmed* animals, although over 99% of domesticated animals are farmed animals." Source: EffectiveAltruism.org.

While those trends in favor of the treatment of animals, especially those for pets, are encouraging, humans' treatment of animals is characterized by a large contradiction: the welfare of animals reared for food, clothing, and experiments, among other commercial uses, is at the opposite end of the scale.

For example, more than 98% of pigs in the United States are held on factory farms.[75] There are no (federal) laws that regulate their treatment; only the time just before and during slaughter is regulated (in the Humane Methods of Slaughter Act[76]). Due to this lack of meaningful laws, piglets' tails are often cut without anesthetic, and grown-up pigs are kept in very limited space where they cannot walk, turn around, or scratch themselves in case of an itch. Due to poor or non-existent sanitary regulations, the animals frequently stand in their own waste. This treatment is done on a species that is highly intelligent and compassionate, needs play, is very sensitive, and can feel pain beyond a doubt. At the same time, pigs are increasingly being kept as pets. The above-mentioned treatments, if done to a companion animal, would subject the owner to criminal punishment. This is all occurring to the same species, in the same country, at the same time. This double standard is perplexing. How can it be explained?

First of all, while doubtless a contradiction on the face of it, it's not sufficient to denounce it as a contradiction alone. Contradictions, or paradoxes, only mean that we don't have an explanation and that our model of the world isn't accurate. The world isn't illogical, it's ruled by cause and effect, and shouting out to the world "This is a contradiction!" is equivalent to yelling "I don't understand it yet!" Like the scientist who observes a phenomenon that existing models cannot explain, we shouldn't blame reality for what we perceive to be

inconsistent but instead work on improving our models. It's humorous to observe how often people openly admit they don't understand something ("I don't understand why people play the lottery!"), but then still feel able to draw conclusions ("People are irrational!"). No, when people consistently repeat actions we cannot explain, it points to us overlooking something. Paradoxes reflect know-how gaps. Closing them is required to understand the situation deeply and identify actions that may bring about change.

The perception that there's a paradox (how humans treat animals) rests on the assumption that it's about the treatment of animals. However, it may primarily be about humans: people treat their pets well because they would feel bad if they didn't (both directly, due to empathy, as well as due to society's repercussions), and those factors don't exist with respect to the treatment of factory farm animals, hence it's accepted. From this point of view, there's no paradox, but it's logical: humans just do what's good for them.

However, it's not always only about humans: many animal protection laws did originate in a sincere, altruistic interest in animal welfare. The fact that those laws can exist while animals are much less protected in other areas may be a result of the plurality of influences. The law is made by different people and parties, ranging from animal rights groups to meat producer lobbyists, leading to a kaleidoscope of rules which may not all be consistent with one another.

Pointing to those contradictions can be useful, although there's no guarantee that it's always effective. Calling for the resolution of contradictions means appealing to logic, and as we'll see further below, people tend to only use logic when it suits them and are perfectly fine with living in a world of contradictions when it's to their benefit.

The (Happiness) State of the World

If we aggregated the happiness states of all living, conscious organisms on this planet, what would the overall balance be? Would it be positive, or negative? And by how much?

Before diving into the details, is it even possible to compare the happiness states of different organisms? In theory, asking "If you could choose to re-live the last minute of your life, or to re-live a minute of somebody's life who just had a painful accident, which one would you choose?" is a sensible question. It doesn't matter that this scenario isn't possible. In fact, the original happiness question pertaining only to oneself is also theoretical, as it's not possible to re-live the exact moment one just lived through. When it comes to re-living others' moments, there are typically more unclear points (especially exactly how it feels to be in someone else's skin), but that doesn't change the fact that, in principle, such a question can be asked and answered.

There are several challenges with calculating a world happiness balance, starting with the unclarity of which organisms should be considered, as the current state of research about who can feel pleasure and pain is still in its infancy. Assuming this will become clarified, the next questions will be how many of those organisms exist, and what their happiness states are at a given point in time. In light of those challenges, calculating a happiness balance appears too ambitious as of today. Further research is required to be able to start approaching this question, which will begin with very high-level approximation methods. Nevertheless, we do have *some* idea of what's happening around us. Does that already allow us to get a first idea which happiness state the world is currently in? Fig. 10 lists events that happened in the last hour (on average) which had

a strong impact—both positive and negative—on overall happiness, and are sufficiently supported by official statistics to allow such an estimate.

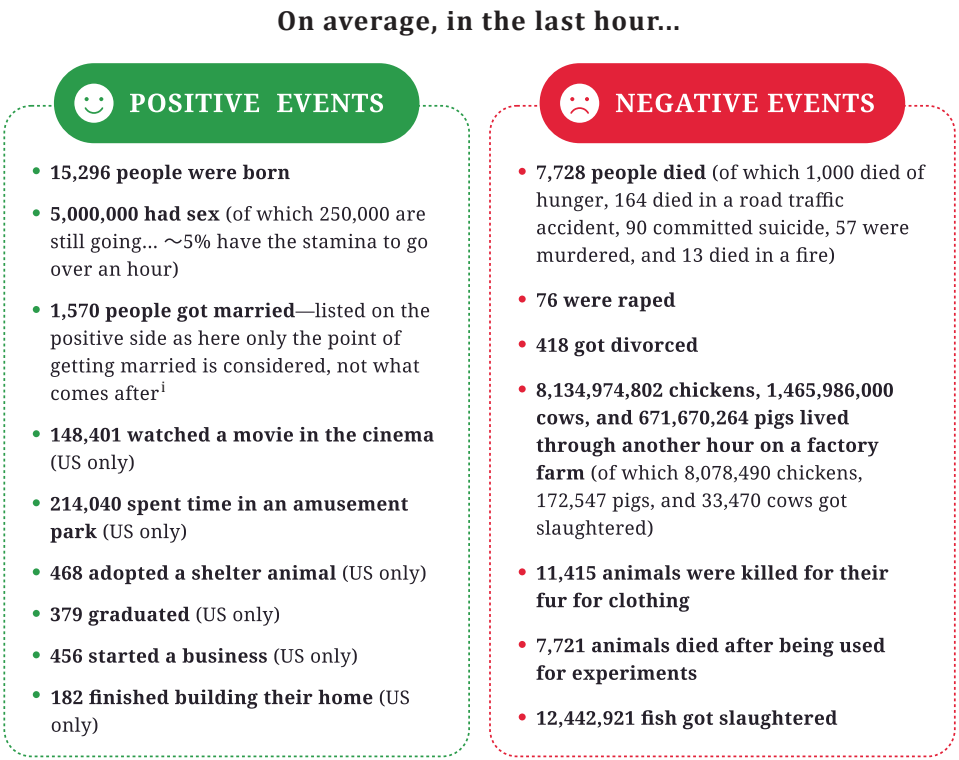

Fig. 10: Selected positive and negative events on overall happiness based on available data.[77] To be further expanded on IncreasingHappiness.org.

i Is it permissible to use humor on the same page that lists the most horrific happenings occurring right now, or is it just cold and disrespectful? Arguing for the former, humor can be a device allowing us to digest and deal with shocking information, preventing us from doing the natural thing: looking away from it all, because it hurts. In this respect, everything which keeps the discussion and thinking going is welcome.

If asked whether one wanted to live through all of the moments listed in Fig. 10 (and some several times based on how many organisms experienced them), what would be the decision? Due to the unevenness of the happiness scale, it can be assumed that most would decide not to experience them. In fact, if told we would be forced to live through them, most people would be scared to death. If this is correct, it would imply that the world's current happiness balance is clearly negative.

The question is: can we, and shall we, turn it around?

The

FUTURE

of Happiness

Chapter three

Happiness as the Exclusive Goal

As we have seen, the importance of happiness in humans' value system is ever increasing: even fundamental goals such as striving for life or reproduction get pushed into the background for the sake of happiness, both on an individual level as well as in terms of society's rules, such as the law. It can be expected that this trend continues, ultimately making happiness the only goal. What should be the moral assessment of this development? Is this trend a good one? Should we embrace it and further foster it by declaring happiness as the exclusive goal, or are there other values we need to protect?

One way to clarify goals is by taking the evolutionary perspective: at the beginning, there were no values, it was only particles floating around in space. Then, a punishment and reward system developed which gave individuals clear incentives. What could be another candidate to pursue as an end in itself? Looking at it from a different perspective: if happiness isn't the exclusive goal, it would imply that in some situations, actions would be taken that don't maximize happiness, causing more suffering. For what other goal would that be justified?

A common misconception about declaring happiness as the exclusive goal is that it means we should aim *directly* at achieving it. However, as mentioned above, this neither works on the level of society's rules and laws nor the level of the individual: the happiest are often those who don't constantly think about how they can make themselves happy.[78] By declaring happiness as the exclusive goal no statement is made about how to get there.

It also shouldn't be confused with striving for *short-term* happiness, or hedonism. On the contrary, optimizing happiness requires a very long-term perspective. Future moments are of equal importance as present ones (as long as they will eventually be lived through in the present) and since there are many more of them, they deserve much more weight in decision-making. In fact, from this angle, present moments become almost negligible.[i]

A reason why we may intuitively disagree with happiness as the exclusive goal is because of what it implies for life, which wouldn't have any intrinsic value anymore. Can it be that life is irrelevant per se, and solely an empty, soulless, and hollow shell that is only relevant to the extent of it being a chance to be happy, and a risk to be unhappy?

There are several reasons why we feel uneasy with this thought. The first one is that humans have learned from history that protecting life is a, if not the most, crucial pillar for ensuring happiness. A society that systematically disrespects life leads to anarchy, destruction, and a severe level of unhappiness. However, negating an intrinsic value of life in a theoretical context must not be confused with devaluing the importance of life in practice. This principle is discussed in more detail further below.

The other main reason why we value life is because it's our heritage from nature: nature gave us the deep desire to strive for survival, as it's a requirement for reproduction, and hence steers us—besides

i This pertains to the analysis of global happiness and is not a recommendation for individuals how they should regard present vs. future moments for improving their own happiness. In fact, the popularity of books such as *The Power of Now* by Eckart Tolle[F1] shows that focusing on present moments can be conducive for individual happiness.

the punishment and reward system—towards survival. However, as mentioned above, we are not forced to agree with nature, and often don't today.

Therefore, as long as there are no compelling cases put forward as to why other goals are worthy of our attention when making decisions, happiness will be regarded as the exclusive goal going forward. It should be noted, though, that agreement to happiness as the exclusive goal isn't a prerequisite to approving the suggestions put forward in this book. As long as there's consensus that happiness is relevant to at least some extent, there can also be agreement on the proposed measures.

The Case for Maximizing Happiness for All

With happiness established as the exclusive goal, the logical follow-up question is: are we talking only about our own happiness, or others' too?

Fortunately, those objectives are very often not conflicting but go hand in hand. As mentioned previously, helping others can be one of life's most long-lasting and rewarding experiences.

Beyond the direct satisfaction received from helping others, there are also indirect rewards. By contributing to a society where we are kinder to each other, we help to create an atmosphere that eventually will benefit us as well as people who are close to us, such as our children. Apart from reciprocal kindness, there are other positive effects too. By helping others, we enable them to turn their attention to actions that may benefit society overall (innovations, donating to good causes, etc.) which they could not have taken if they had been

busy with fixing their own issues, or in more extreme cases—if we saved their lives—may not have even been around to give back.

Happy people care more for others[79], so helping others get to the positive end of the happiness scale may be the best recipe for spreading social behavior. Moreover, unhappy people don't only care less about or ignore others' happiness, but often proactively create more unhappiness, leading to a downward spiral. The obvious example is the act of taking revenge, although there are many other, subtler cases where this effect occurs. For example, when we are aggressive towards others, often the reason we give for the behavior was not the actual one, but only a pretext to blame others. The real reason may have been as unrelated and mundane as a headache. It's quite possible that if there is ever a global nuclear war, it was started by a dictator on a day when he was suffering from abdominal pain due to constipation, although that will probably never be stated as the official reason. Humans use blame as a lightning rod, creating the illusion that something can be done about the issue as the culprit has been identified, dispelling the unnerving feeling of helplessness. However, the root cause is always one's own unhappiness. Hence, simply making people happier can resolve conflicts that, on the face of it (based on the purported logical reasons for the conflict), look unresolvable.

A thought experiment: giving a "happiness pill" to both sides in a military conflict may lead to peace on the spot, and decades of inflicted harm may fade into insignificance. What happened in the past doesn't matter per se, but only to the extent it causes pain in the present. While a happiness pill doesn't exist, other steps can be taken based on the same principle, such as improving the conflicting parties' living conditions, fostering economic development, upgrading health care, and similar measures.

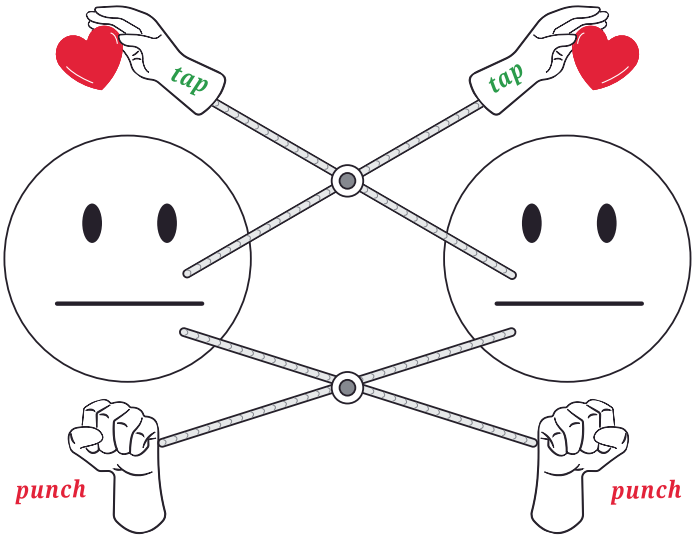

Fig. 11: Happiness begets happiness.

The *happiness begets happiness* effect may also help to explain the success of the *tit-for-tat strategy*. This is the principle of starting with a positive (collaborative) behavior when interacting with new parties, and only switching to a negative (or punishing) behavior if the other party initiates it. In general, it's conducive to overall happiness to approach new people with the mindset and assumption that they are friends unless proven otherwise.

Despite all of the above, let's assume for a moment we wouldn't get any direct or indirect rewards from caring about others. Would there still be reasons to act socially? As mentioned in the "History"-chapter, we do have in-built mechanisms for pure altruistic behavior on an individual level. And in addition to those, are there even more reasons why we should care about others' happiness?

To illustrate possible reasons, a thought experiment may be helpful. Let's imagine that the transporter technology as depicted in the *Star Trek* series becomes available and that sending ("beaming") a person from one location to another is possible. For everybody who believes that we are nothing more than the particles we consist of, beaming would be a fast and agreeable form of transportation. However, let's assume that the actual technology differs from the science fiction series by not sending atom by atom separately and then rebuilding the body, but by only reading the person's composition, and re-creating it at the target location, creating a copy. What would our relationship and attitude towards that copy of ours be?

For example, further assuming that to prevent unwanted duplication, it was proposed that the original person would be disposed of, "killed." Would we, as the copy, not care about the original anymore? Or, what if the copy was given the option of experiencing a small amount of pleasure at the cost of inflicting a high level of long-term suffering on their original version? Even if we rule out feelings of compassion or other negative effects on self-interest, wouldn't even the most egoistical person have strong reservations about accepting this offer?

Furthermore, assuming that our copy was not perfect, but one of the copy's hairs was pointing in a slightly different direction, would that change our assessment? It probably wouldn't. The same applies if there were two hairs not identical to the original. Like this, we could continue the deviations (not only applying to hair, obviously), which wouldn't impact our assessment. However, at what point would the assessment change? Could it be any other than when there are changes to the affected individual's capability to feel pleasure and pain?

The question of how we relate to different versions of ourselves isn't as theoretical as depicted above. Looking back at times when we were a child, or looking forward to our future self a year[i] from now, when not a single cell will be the same as today, raises similar questions. For example, if we compare our adult self to our infant self and to other adults, we find that in terms of physical similarities we resemble the latter more. The lines of what constitutes ourselves are much blurrier than it feels at first, and this has to be taken into account when it comes to the question of how much we care for ourselves vs. others.

However, it might not even be required to establish a mental connection to ourselves to care about others. We are capable of logical thinking, we understand that it's beyond doubt that others can feel too, and the moral groundwork has already been done by the fathers of the *Enlightenment* who taught us to have the courage to make use of our reason.

Besides, we can afford it now, too: The days are gone—at least for almost everybody who is reading these lines—when we were so occupied with reducing our suffering that we could not focus on anything else. We are very lucky to live in these times, and when there are moments when it doesn't feel like that, a quick reflection and internalization of how rough life used to be should set us straight. At least a share of our newly gained freedom should be directed toward those who aren't that fortunate.

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i We don't have to wait that long: About 330 billion cells are replaced daily in an adult's body, equivalent to about one percent of all cells, which means that in 80 to 100 days, 30 trillion cells will have replenished, being the equivalent of a new version of ourselves.[F2]

Anti-Relativity Theory

With the amount of suffering in the world, we may doubt whether we can have any relevant impact. Even if we did help others, would it not just be, as the German saying goes, a drop of water on a hot stone?

The flaw in this line of thinking is that it assumes that there's a single world that experiences pleasure and pain. However, there's not one world, but there are many: only considering humans, there are billions. Every time a human gets born a new world gets created. And every time a human dies an entire world comes to an end.

The improvements made to a single world are absolute and significant and don't relativize amid all the other things which are happening around it. If we help somebody, and an observer objects by saying "What's the point? There are still many others who had a bad day today" we instantly know that this view is flawed. However, we also fall victim to it ourselves. For example, when we hear about casualties in a natural catastrophe, some may find consolation in the thought that every day terrible things are happening in this world, therefore the event we just heard about is just one more, and therefore not that significant.

The reason for this may be self-protection. If we internalized all the global suffering with no way to alleviate it by using relativization as a lightning rod, it could feel intimidating and overwhelming, making us depressed and paralyzed. Therefore, not fully understanding on an emotional level what's happening every day, and thus ignoring it, may contribute if not to bliss, at least to keeping us sane.

On the flip side, of course, it means that empathy is reduced, and so is our urge to help others as well. So, when is it useful to feel compassion, and when is it not? Similar to nature's incentive system, which rewards and punishes only when (it thinks) it has an impact on our actions, the same rule is useful here: feeling empathy, and hence sharing suffering on some level, only makes sense when our actions could bring a change. Getting dragged down for every bad happening in the world is useless, as we cannot do anything about it.

And not only could such misdirected empathy drag us down, but it also risks numbing our compassion in situations where we could have an impact. Like nature, which soothes punishments and rewards in cases where it realizes that no action can be taken, to keep the incentive system effective, we should strive to protect ourselves from feeling too much empathy when we cannot have any impact. And if we still get depressed about it, maybe it helps to remind ourselves that if we want to maximize happiness, our happiness counts as well. We should restrain empathy—both for our sake as well as for others—to those moments when we can make a difference.

The Dark Ages, Part 2?

As we have seen before, the world's happiness balance today is clearly negative. Has it always been negative? What about 10,000 years ago, when humans were hunter-gatherers?

To approach this question, it makes sense to break it down into its components. The overall happiness balance is driven by a) the number of sentient beings capable of feeling pleasure and pain and b) what

their actual happiness states are. Furthermore, for analytical purposes it's helpful to classify sentient beings into three groups:

A. Humans
B. Non-humans whose existence and/or happiness states are not directly related to human actions (e.g., birds in remote places)—further referred to as "Independent non-humans"
C. Non-humans whose existence and/or happiness states are a result of human actions (e.g., animals reared as food, pets)—further referred to as "Dependent non-humans"

Starting with humans: 10,000 years ago, it's estimated that 5 million people walked on this planet[80]. Today, we have reached the 8 billion mark[81], a 1,600-fold increase. Concerning the quality of life, as mentioned above, it has risen strongly. However, this doesn't mean that overall happiness, within the human group, has increased. To assess that, we also need to consider if the happiness balance of the average single person is positive, i.e., if the question "Would you agree to re-live your entire life again, as an end in itself?" is answered affirmatively. If it is not, then the much higher number of humans could overcompensate for the improvements in happiness on an individual level. In a world of 10 people, if their lives improved from a happiness score of –5 to –3, it would imply a gain of (5 – 3) x 10 = 20 points. But if the population has increased to 20, i.e., 10 more, who contribute with an additional –3 x 10 = –30 points to the happiness balance, then the overall effect is negative (20 – 30 = –10).

Due to the strongly improved living conditions, and the positive responses in happiness surveys, it is fair to assume that the average person's life today can be considered to be on the positive end of the happiness scale. Therefore, the higher number of humans alive

today works in favor of the overall happiness balance, and it can be stated that happiness (among humans) has increased overall.

With respect to the second group, independent non-humans, it can be assumed that there have neither been significant changes concerning their numbers nor in their happiness balance, as 10,000 years is a relatively short time frame from an evolutionary perspective, which doesn't give room for fundamental changes.

The main differences have occurred in the third group, dependent non-humans. While almost non-existent 10,000 years ago, that group has reached its peak in terms of numbers in the present day, due to its correlation with the world population. Breaking this group down further, it's estimated that:

- 471 million dogs and 373 million cats are kept as pets (2018).[82]
- Over 70 billion chickens, 1.5 billion pigs, 600 million sheep, and 300 million cows are slaughtered for food every year (of which the overwhelming majority live on factory farms).[83]
- An estimated 0.97 to 2.7 trillion fish are caught from the wild and killed globally every year.[84]
- 40% of fish catch is unintentionally caught and most are thrown back into the sea already dead or dying, including 300,000 small whales and dolphins, 250,000 endangered turtles, and 300,000 seabirds.[85]
- Over 35 million ducks and geese are reared for foie gras production every year[86]
- More than 71 million animals were used for experiments (in 2020).[87]

And what's their happiness balance? Looking at the life of a pig on a factory farm—to take one of the softer examples—would we choose to re-live its experience as an end in itself?

For anyone answering this question affirmatively, more education is required concerning living conditions in factory farms. Driven by the strong incentives for humans to rear animals under the most cost-efficient conditions, which lead to limited space, bad air condition, absence of medical treatments and anesthesia in case of injuries, and stressful transport to slaughterhouses, among many other unfavorable factors, animals' lives in factory farms are—in the overwhelming majority—miserable and painful.[88]

The only group listed above whose happiness balance may be positive are pets, as those are mostly kept for affection, love, and the willingness to care for them. However, those represent a small percentage, not changing the picture of the dependent non-humans group.

Overall, due to the number of dependent non-humans and their negative happiness balance, the world's overall happiness balance is worse than it was 10,000 years ago.

What will people of the future think when they look back on today's situation? If the above reasoning is correct and assuming that the overall happiness balance will improve again in the future, there can only be one conclusion: the times we are living in right now will be regarded as the new dark ages.

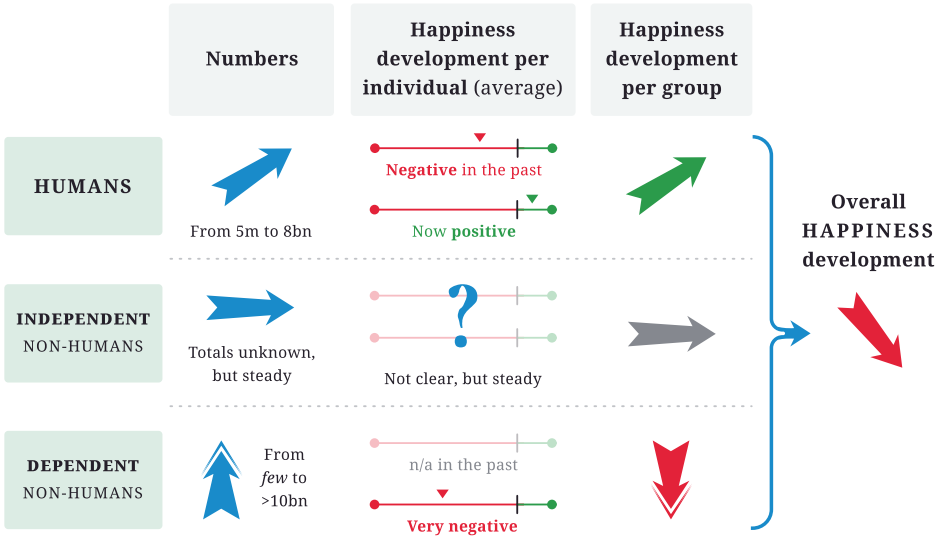

Fig. 12: Changes in happiness over the last 10,000 years.

Understanding Our Perceptions

Can the above be true? It doesn't feel like the dark ages to us today. Quite the opposite, haven't we come a long way with all the technological advancements, democracy, liberties, and the high standard of living for the masses, and therefore left the dark ages far behind us? The answer is yes—however, that only applies if we only take our interests into account. If we take this holistic view, this progress is more than outbalanced by our actions towards other species.

This discrepancy—what it feels like vs. what's stated above—is so enormous that it makes sense to dwell on it further. Isn't it only us who don't see today's situation as so bleak but also our friends, family, and almost the entire society around us? Yes, and that's the point: we are

the result of the way we have been brought up by the society we live in. We like to think of ourselves as independent thinkers, who made a conscious decision to agree with what society thinks, while in fact we have not only been influenced by it but are a product of it. It takes a lot of understanding and strength to break out of this inherited view.

It's important to understand that the present moment always feels, and has always felt in the past, as the most enlightened possible. At times of human slavery, for example, it felt perfectly normal and justified to society. It's incomprehensible today, but that's only because society's attitudes towards it changed.

The "arrow of time" plays a role too: while we know what happened in the past and can see the path we have taken and progress we have made, we cannot look into the future and see the path ahead, and therefore cannot set our current situation in relation to all the realizations we are still going to have.

There may be another reason for our notion that "society cannot be that wrong." Democracy is sometimes misunderstood as the majority being always right. In fact, it's only a practical solution due to the lack of better alternatives.[i] In any case, it feels safe to go along with it, as we feel protected by the society around us that shares our views, no matter if they are right or not.

Our positive view of nature may contribute to the denial as well. The belief that on some level, there must be an omnipotent power that takes care of things, is deeply ingrained into us. This doesn't require

i The statement "Democracy is the worst form of government, except for all the others", often attributed to Churchill, is in fact an aphorism by an unknown originator.[F3]

religious faith (even though it reinforces it.) From early childhood, we get the impression that our parents are all-powerful and take care of *us*; which, at that time, we understand as *everything*. At some point, we learn that they are not all-mighty, but we don't abandon that belief entirely. Grown-up, wounded soldiers still call for their mothers for help on the battlefield.[89] (This is a reminder that adulthood doesn't replace childhood, but is on top of it.) The fact that we are alone in this respect, and that no higher power can hear us or those who suffer, and who prevents a moral catastrophe, isn't easy to accept—and therefore is simply often not accepted.

And what about the media? Why, if the current injustice is that severe, does it not get reported more often? This question is based on a fallacy: the media never aims to report what's objectively important, but always what people want to hear about (ideally re-confirming their views), as it's an industry like any other. It aims for as many clients as possible; in this case, readers, listeners, or viewers. For the most part, the news is entertainment—and reporting and displaying suffering on a large scale isn't considered good entertainment.

At some point, we'll have to face the dreaded dialogue of generations, as it happened many times before: children asking their grandparents how they were able to tolerate, look away, or even actively participate in actions now considered inhumane, be it supporting or participating in wars, persecution of minorities, or discrimination against other community members.

The difference will be, however, that defending our position will be tougher: we cannot claim that we didn't know that non-humans can feel pain (reason tells us), nor that they get treated badly (we have all seen those repugnant pictures of animals in factory farms), nor on

which scale they suffer (the dimensions stated above are not new to anybody), nor that there weren't any parallels in history: mistreatments due to skin color, gender, age, sexual orientation, nationality, religion—we have had it all many times before.

Furthermore, and this makes our position especially weak, the required efforts to have an impact are lower than ever before: while our forefathers had to risk their social standing, or sometimes even their lives, for standing up to what we now consider inhumane, much less is required from us today—simply refraining from certain actions would already make a difference, as outlined further below.

Maybe our short lifespans will save us from those conversations with future generations. However, we shouldn't count on it. The long-term trend of life expectancy increases continuously, and the changes in society's values have already started, and are ever-accelerating.

The Future Society

The clear trend towards more social actions—both in terms of how much is done for others, as well as with respect to the expanding circle of whom we care about—can be expected to continue, eventually encompassing all sentient beings who are capable of feeling pleasure and pain.

Once society is living by the principle to maximize overall happiness, it will be a (relatively) stable structure. Not only will people be raised in that spirit but deviations from it will be punished both in terms of law, as well as through softer factors such as social pressure. However, the development of this future society may still take some time. What could speed it up?

Three stages make us act compassionately: we need to *see* what happens, *understand* it, and have an *incentive* to take action. Measures to accelerate each of those stages will now be discussed in turn.

Increasing Visibility, Part 1: Global Level

What we do not know, we cannot act upon.

One level of not knowing is if *nobody* knows. For example, humanity as a whole may not be aware of which species can feel pleasure and pain. There have been occasional studies in this direction. However, they are few and far between, and some of them were driven by the requirement to get a degree or build a scientific reputation, rather than the importance of the matter itself.[i]

Do fish feel pain? What about insects? Human research has only scratched the surface of what there is to know about these questions. Eventually, there will be a detailed classification, a periodic table of sorts, reflecting the capability of every species and subspecies to experience pleasure and pain, under what circumstances, and how much. Today, we are almost entirely in the dark.

Could it be that we prefer to stay in the dark? Are we afraid of what this knowledge would lead to, both concerning our feelings of compassion, and what that would imply for our responsibilities? Imagine

i The fact that such research is frequently behind a paywall doesn't help to dispel the impression that it was conducted for personal gain. In general, it's surprising how little research has been done for happiness directly, considering it is the main goal not only with respect to non-human happiness, but humans' too, as outlined further below.

it's confirmed that insects feel pain—are we then supposed to wear a mask (at least we're used to that now) to not inhale them, or sweep the ground in front of us to not step on them as some Jain[90] do? And what if pesticides cause significant suffering—are we supposed to stop using them, lose our crops, and starve? Isn't that all… insane?

Concerning feeling compassion, we don't have to worry much as our capabilities to feel empathy for animals so different from us are very limited. And even if there's a short spike in compassion after we found out that a certain species can feel pain, it will fade away quickly again, due to both relativization and the natural process of soothing and forgetting.

Regarding the implications of our actions, this must be treated as a separate matter. We don't know yet what the outcome will be, and therefore speculating about possible actions is premature. For sure, sticking our heads in the sand because of possible implications cannot be right. Imagine somebody didn't know that other humans can feel pain and justified it by saying, "I don't want to know—it may mean that I will then have to take others' suffering into account." We need to find out, the sooner the better.

Also, the implications may not be as radical as our mind anticipates them to be. Continuing the thought experiment from above: assuming there are two types of pesticides, equal in terms of costs and efficacy, but differing by the suffering they cause for animals. Today, we may unintentionally choose the one which causes more pain—not because it's economically or in any other ways better for us, but simply for the fact that we don't know. Or suppose we injure an insect, and it's still alive. If we know it can feel pain, then we may be quicker to kill it as we know it will shorten suffering.

There will be many similar cases where the simple fact of knowing could make all the difference, with no effort or cost on our side. In light of this, there's no good excuse anymore to stop us from finding out.

Increasing Visibility, Part 2: Individual Level

Another type of not knowing is on the individual level: the knowledge exists in the world, and some are aware of it, but not everyone.

One example of a knowledge gap becomes evident when people are asked about the living conditions of factory farm animals whose meat they just bought. Typical answers range from "Oh, I don't know" or "Not sure, probably not very good" to the evasive "Eh, leave me alone" or "Ah, you're one of those."

Hypothetically, what if meat producers had to place pictures on packages that accurately reflect the animals' living conditions when they were still alive? Similar to the warnings—and in some countries very expressive pictures[91]—on cigarette packages, their purpose would be education, not restricting consumers' rights to buy the product. Wouldn't opposing such measures be arguing to hide the facts from the people?

On some level, most people are already aware today, or at least have a hint of the situation. We have all seen the ugly pictures of factory farms that animal rights activists try to shove in our faces. However, there's still some fuzziness about it—or at least we create it in our minds—by thinking that those may have been exceptions, or that animal protection laws are already improving, giving us

the comfortable feeling that "something is being done" or "we're already better than other countries in this respect." However, those are only comparisons[i], not addressing the actual, absolute state of the matter, often serving as justification to not check further or take action. Today, it's still far too easy to look away.

Another type of not knowing is formerly knowing, meaning we knew it before, but forgot, or pushed it away. It's human nature to do that, especially for unpleasant things. This applies to everyone, no matter how determined one is to maximize overall happiness. We are different versions of ourselves at different points in time, and our mindsets and motivations fluctuate accordingly.

To counteract this forgetting, it can be useful to put reminders in our calendars—not only to remind us of the facts but to expose ourselves to material that helps us to remind ourselves on an emotional level too. These can be reminders to revisit horrific pictures of suffering animals, or re-watching documentaries or movies which depict suffering[92]—anything that makes us understand (again) that suffering is happening and that we need to help reduce it to the best of our abilities.

A more positive and encouraging way to keep our social activities going is to make it a habit, for example by joining a non-profit organization that meets every other week, or by setting up a recurring payment for a charity, thereby getting into the swing of helping, where it would feel wrong to stop. To overcome the initial inertia,

i It's a common tactic to point to other happenings in order to make one's own actions look better. However, similar to the murderer stating that there are others who kill even more, it's not a valid argument. Actions have to be evaluated by their absolute impact, not how they compare to other actions which may be even worse.

we may commit ourselves to doing it for one or two months. After that, it will probably become a habit[i], and we "locked ourselves in" to doing good.

Fostering people's education doesn't always mean approaching them proactively. Quite often, people try to find out what's happening by themselves, but it's cumbersome. What's the typical life of a dairy cow? How does it feel for the mother cow if her calf gets taken away? How do these happenings relate to experiences we are familiar with? Researching well-founded answers to such questions can take significant time, causing people to give up on the endeavor. There should be a central place where all those questions have been researched scientifically and objectively, allowing easy access. One of the objectives of IncreasingHappiness.org will be to provide such a catalog of questions and answers.

Understanding What Happens

Only knowing the facts isn't sufficient, as that covers only one aspect of understanding, the intellectual part. There's a deeper level of understanding, grasping what happens on an emotional level.

For instance, we may know, on a rational level, that over 6 million Jews died in the Holocaust.[93] However, the human mind isn't made for understanding what this really means. We may get a hint of it when,

i This concept is an inspiration from the software industry, which uses 30-day trial licenses based on the insight that after that time, it becomes a habit which isn't difficult to sustain anymore. In addition, the benefit of joining a non-profit is that we meet like-minded people who have similar values, which can form strong long-term friendships.

for example, we stand in front of the mountain of pairs of glasses in the Auschwitz Museum, which were taken from the victims before they were forced into the gas chambers. At that point, we can make a connection to a person's life, as we know each of those glasses was once worn by somebody. Here again, understanding is easier because it's similar to our situation: each of us isn't a group, but an individual, and we can relate much better to other individuals, compared to groups.

Therefore, to make the information "sink in" and be properly understood, it should provide a specific example—one can be sufficient—of an individual's fate that people can relate to. The movie *Babe*, which depicts a pig that people can identify with due to its human-like behavior, can be more powerful in changing people's views than stating the number of 3,000,000,000 factory farm animals.

While the above examples rely on empathy, probably the most effective way of understanding is feeling it directly ourselves. For example:

- A sympathetic aspect of fasting, as practiced in *Ramadan*, is that it is a reminder of what hunger feels like. This has proven to increase charitable giving to those in need, especially to those who suffer from hunger.[94]
- One's own experiences, and especially life-changing experiences, are often the determining factors when deciding which charity to give to, and whether to give at all.[95]
- The wealthy give, but the poor give the poorer more.[96]

The list could go on, but the point is made: if we feel it, we "get it." And if we don't, we don't.

In this respect, the overall improvements in human lives cause the risk that we forget how bad *bad* can be, and *suffering* merely becomes a word. How can people be reminded of what it really means?

No matter how lucky we are in life, we still experience unhappy states from time to time, as when we hurt ourselves accidentally. In those moments, we could tell ourselves "Imagine this a million-fold to get an idea of what's happening every minute." However, while this can be a reminder of suffering in general, it's not linked to any specific actions, and hence may not be that effective. Also, while it may give us some hint of what's happening, we don't fully understand—on an emotional level—what a million-fold means. In fact, it's more like a billion-fold, but we cannot understand those numbers anyways; replacing a million with a billion doesn't make a difference in terms of impact on our motivation.

To be effective, pain should be linked to a specific action. For example, when deciding to buy factory farm meat, ideally, from an understanding point of view, we were able to re-live the same experience of the factory farm animal's entire life. Of course, that's not possible. But assuming it was, how would we feel just before the re-living of the factory farm animal's life starts? Nervous? Probably that would be too soft of a word—which shows we have a better idea of what's happening than we would like to admit.

Assuming it was possible to experience other beings' feelings, the best and deepest understanding of the world's state would be if we were connected to all sentiments of living creatures, experiencing them all collectively. This would make us act directly toward the areas where the pain is the greatest. It's not possible, of course, and even if it was, it wouldn't be certain if it should be applied. It only emphasizes the issues arising from the individual nature of happiness.

Incentivizing (Social) Action Taking

Even if people understand on both rational and emotional levels what's happening, there still needs to be an incentive to act.

Empathy is one of the most natural incentives, as it's already built into us, and it's nothing other than sharing pain on some level, so that if we help others, we help ourselves. And it can be strong. Continuing from the above, assuming we are forced to re-live the life of a factory farm animal, after that experience, it's likely that even the strongest opponent of animal rights will instantly turn into an animal rights evangelist. Sometimes understanding the situation is sufficient, the rest is taken care of automatically by empathy.

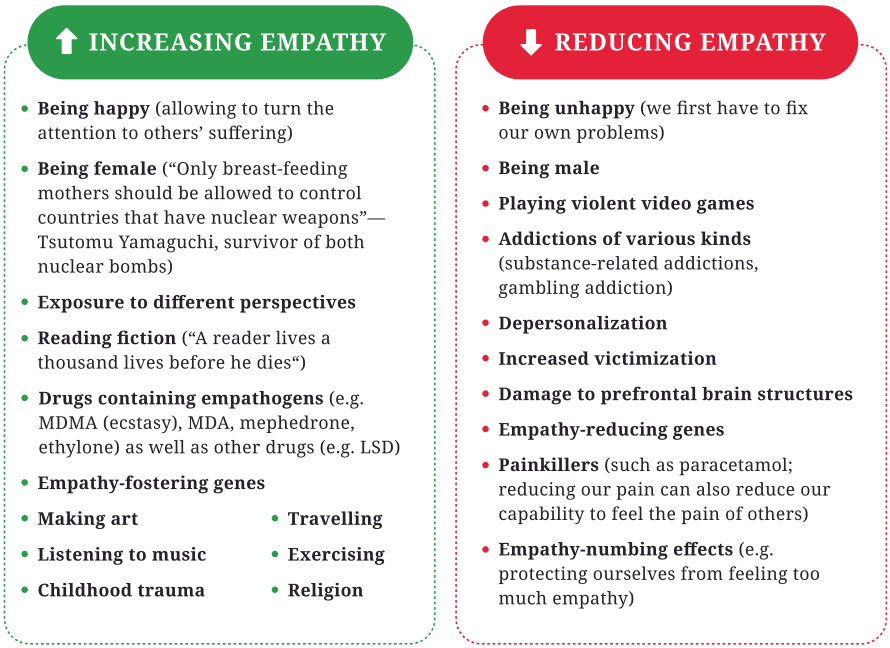

Fig. 13: Factors fostering and reducing empathy.[97]

With empathy being a strong driver of social behavior, how can it be fostered? As a first step, it's important to understand all the factors which could strengthen or weaken it (see Fig. 13). This list isn't comprehensive and will be further expanded and detailed on IncreasingHappiness.org, along with possible actions for several of those factors.

However, one important factor that may de-incentivize social action-taking shall be discussed here: the feeling of being overwhelmed amid all the suffering in the world, and that we cannot make a difference. In those cases, we have to remind ourselves that every world is separate, and doesn't relativize, as mentioned previously. Helping one individual already helps an entire world.

Also, there can be a feeling of helplessness sometimes. For instance, if we watch individuals suffering on live television and we know that it's not possible to help as events are already unfolding and our actions would come too late. If too often exposed to such situations, our feelings may go numb too, decreasing our urge to help. In those cases, it may help to change our interpretation: while we cannot help the individuals we see, we know that we can make a difference concerning the same type of suffering in similar cases. It may even culminate in the—highly perverse, but potentially effective—feeling of positive encouragement from watching pain by thinking that this is exactly what we'll prevent in the future. There will always be opportunities to do good; the world will not run out of suffering anytime soon.

Without being aware of it, we may subconsciously nurture the feeling that we cannot have an impact because it gives us the excuse not to take action. However, that's mostly not justified. If we only have a few dollars to spare, we can already make a difference in somebody

else's life; micro-donations are as easy as never before[98]. It takes less than one US dollar to buy a meal for somebody in need.[99] A donation of 50 US dollars can give a blind person their eyesight back.[100]

There are other cases where we think we cannot have an impact, while in fact we can. A common misconception is that refraining from buying factory farm meat will not have an impact, as the reduction in demand by one unit will not change meat production levels. Traditionally, the counterargument was that the buying decision still supports factory farming and is therefore morally objectionable. However, there are much more direct ways of reasoning. It is correct that buying one factory farm chicken, for example, will likely not alter the levels of chicken raised. But it is *possible*, and if it occurs, it will not only have an impact on one chicken but many. Assuming that the thresholds for the reduction or expansion of a factory farm's production facilities are steps of 1,000 chickens, i.e., 1,000, 2,000, 3,000, and so on, then increasing demand from 3,534 to 3,535 will not have an impact. However, if we happen to be consumer no. 4,000, and we can never be sure that we are not, then it impacts not only one chicken but 1,000. In other words, by reducing the demand by one, the *expected impact* of consumption is exactly one chicken (1,000 chicken x 1/1,000 probability = 1). With this in mind, hiding in the crowd isn't possible anymore.

It's important to stress this, as it looks similar to other situations where we make decisions as a member of a crowd, but it's crucially different. For example, a German who was criticized for voting for Hitler in 1932 may correctly reply that had they voted differently, it wouldn't have made a difference. It would still not be morally tenable, of course, because they contributed to the tragedy. However,

the above case is different: our actions wouldn't only be objectionable on an abstract moral level, but they have a direct and real impact.

The concept of probabilities is important in many other cases too, although often ignored. When there's no conclusive evidence one way or another, we take it as being permitted to do whatever we want. For example, assuming a 50% probability that crabs can feel pain[i], many people wouldn't see anything wrong with cooking them alive, as it's not proven yet that they can feel pain. The correct assessment, however, would be to multiply the amount of possible pain by its probability.

As mentioned above, changing one individual's life already changes an entire world. With that in mind, it's already clarified that we can have a significant impact. However, there are also encouraging considerations about changing the entire status quo. Today's situation is also the result of re-enforcing effects: for instance, as the mistreatment of specific groups in society is accepted, more people approve of it, hence it becomes even more accepted as a standard in society. On the one hand, this makes the status quo very stable and difficult to change. However, there will be a tipping point where attitudes change, which will then also cancel the re-enforcing effects (and probably establish re-enforcing effects in the opposite direction), making progress much faster. A decrease of mistreatment by 10% for example, from 100 to 90, doesn't mean that the next gain of the same amount, from 90 to 80, will be just as hard. Instead, the more progress is being made, the easier it becomes.

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i Several studies have shown that decapod crustaceans and cephalopod mollusks are capable of experiencing pain.[F4] As a result, in 2021 the government of the United Kingdom officially recognized lobsters, octopus and crabs as sentient beings, impacting governmental policy decision making.[F5]

Today, when looked at globally, it appears like we are still quite far away from such a tipping point. However, it's encouraging to know that it may not be required to convince the majority (estimates range from 3.5% to 25%)[101] and that new generations can be a major force for change[i]. When it happens, it will not be possible to state which specific actions caused it; all will have contributed to it, even if they looked inconsequential at the time. Therefore, we shouldn't feel intimidated by what appears to be a fight between David and Goliath. (Although with an estimated 600 million vegetarians globally[102], a number surpassing the populations of the US, UK, Canada, France, Spain, and Australia combined, the number of people who care about animal welfare may be much larger than the parallel of a David vs. Goliath may suggest.[ii]) In the words of Margaret Mead, the American anthropologist: "Never believe that a few caring people can't change the world. For, indeed, that's all who ever have."

Returning to incentivization: Ideally, social behavior is encouraged by *positive* incentives, as then everybody benefits. Shall it even go so far as rewarding major achievements with prizes, such as a Nobel Prize equivalent for improving overall happiness, which combines social recognition with monetary incentives? Sometimes there's the notion that doing good should be done for altruistic reasons alone. This is

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i Generational replacement is what shifts public opinion.[F6] This shows that the process of learning is much easier than that of unlearning. Hence, it may be recommended to allocate resources to influencing newer generations' views, both because they will be around longer and also they are more open to change. For that to happen, however, the older generations need to be on board as well, or at least convinced not to block this development, as they are the teachers of the new generation. The ambition still needs to be to convince as many people as possible, no matter their age.

ii It should be noted that the reasons for a vegetarian diet are not all due to ethical considerations. For example, religion and income play an important role as well.[F7]

a sympathetic view, but it misses out on many ways humans get incentivized. To make all people sing, the entire keyboard needs to be played.

A challenge to incentivization is that we don't feel the improvements directly ourselves, similar to how we cannot feel how much suffering there is in the first place. We do feel better for helping, and it may trigger additional prosocial behavior due to reinforcing effects[103], but the rewards are not in proportion to how much good is being done. Also, no animal will ever say "Thank you" for having been spared from a life of suffering on a factory farm, which is why animal welfare is sometimes described as the most altruistic form of giving.

How can we get a better idea of how much good has been done? Approaches include:

- **Imagining the gratitude**: One can imagine that an animal walks up to us, cuddles us, and expresses with tears how grateful they are for having been spared from the pain of a factory farm. While this may seem bordering on the insane, it's a legitimate thought considering that it would happen if it weren't for the practical circumstances that it cannot happen.
- **Converting it to the positive**: Picturing having created a lot of joy and happiness can sometimes be more rewarding than the defensive thought of reducing suffering. As reducing pain can be equated with creating long-lasting states of high levels of happiness, re-interpreting it as having achieved the latter may feel more rewarding.
- **Advocates filling the void:** If animals cannot show gratitude, humans have to jump in and thank other humans for their actions on behalf of animals.

A future form of incentivization, which may be very compelling, is to only give new sources of happiness (as elaborated below) to those people who act socially. The deal is simple: you can become much happier, but only if you care about others' happiness too.

When all (positive) incentives fail to make people act socially, the stick has to be considered: external punishment systems, such as the law, can be very effective. And not only do they deter actions that cause unhappiness, but they also have re-enforcing and solidifying effects, creating the foundation for further advances: by codifying it into the law, progress is documented, and another step is chiseled into the stony stairs towards a more caring society.

However, while powerful, laws are often late: before they get passed, they require, at least in democracies, wide acceptance in society. Therefore, the primary focus has to be on changing society's views. Where to start? The answer may be uncomfortable: change always starts with ourselves first.

Humans vs. Non-Humans

If we agree that maximizing happiness is our goal, then it doesn't matter in what body it occurs; only the intensity with which it is perceived is relevant. Naturally, and often amplified by religion[i], humans prefer to see themselves as intrinsically more valuable than other non-human animals. However, latest since Darwin, we know better.

i Example from the Bible: "Let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move along the ground". (Genesis 1:26-27)

A difference that needs to be taken into account is that, as mentioned earlier, humans' more sophisticated cognitive skills lead to the capability to feel some emotions more strongly, and in some cases to perceive entirely new emotions not shared by non-humans. However, the essence of this is that different species feel differently and that they have to be treated accordingly. Within the very diverse group of non-humans, there are also vast differences in how happiness is perceived, calling for different ways of treatment.

Human's comparatively long lifespan, in combination with the capability to have feelings about events that happened a long time ago, also needs to be taken into account. However, we should be careful with trying to derive any fundamental prerogatives from it: the bowhead whale, which possesses sophisticated cognitive skills—it's a mammal after all—can easily reach an age of 200 years or more.[104]

The key difference lies somewhere else: humans are the decision-makers on this planet. While this doesn't grant any priority per se, it does have a significant practical impact. As outlined above, improved human happiness can foster social behavior as it provides the freedom to turn attention to other species. Imagining a drastically negative event, such as a global war, it can be assumed that humans will focus even more on fixing their own issues only.

Another factor that sets humans apart is their skill to innovate and bring fundamental changes to the world. Those can be the main drivers for happiness, ranging from small technical advancements up to happiness engineering, as discussed further below. Imagining the innovation that didn't happen due to premature death—be it due to diseases, wars, genocide, etc.—is mind-boggling. Had there

been fewer such decimating events, society would likely already be happier, and caring more for all sentient beings.[i]

This special role humans play should, however, never go at the expense of other beings' happiness. The above is only meant to show that this effect exists and that humans are relevant for the future development of happiness beyond feeling pleasure and pain themselves.

A New Framework for Debates

With humans being the decision-makers on this planet, it makes sense to look at how decisions are made. In the liberal and democratic parts of this world, it is through discussion and debate.

The higher the level of debate, the better the decisions can be assumed to be. Unfortunately, today's discussions often lack adherence to rules that could ensure more conclusive outcomes with less confusion and an actual change in views.

What makes a good debate? It seems to come down to three pillars: mindset, clarity, and logic. A detailed elaboration of those, including examples, would go beyond the scope of this paper, and will therefore be published separately on IncreasingHappiness.org. In this section, only a summary of the pillars and core concepts of debate is provided.

i This doesn't mean that there would have been more happiness overall (more people would also have caused more negative effects that correlate with population numbers), only that more innovations would have occurred, and that society would be closer to the future society than is the case today.

Concerning *mindset*, debates should be approached as a quest for the truth and nothing but the truth. A special focus should be on listening and understanding to learn together and get closer to the truth, instead of trying to defend or push one's views. Current literature on the topic takes a diametrically opposite approach with guides such as "How to win debates", "How to crush your opponent in debates" and similar. Such a mindset leads to trench warfare with no prospects of making real progress. Instead, debates should be thought of as a science, a joint effort to get to the bottom of how things are, and which actions need to be taken.

Another parallel to science: every good scientist has experienced how hard it is to achieve new insights, and how easy it is to miss things, and be wrong. Similarly, a common phenomenon in the game of chess is that there are positions where very talented players conclude, after deep analysis, that no moves fulfilling the set criteria are possible—only to get shown that a simple solution does exist. Science, chess, mathematics, and similar logical endeavors can be great teachers of humility, and that mindset is important to bring to discussions as well.

The skeptic's mindset embraced in science should also, and especially, be applied to our views. Our deepest convictions are often those that go back the farthest, starting from childhood, or even infancy, and are therefore often not critically questioned, without us being fully aware of them. In this respect, an ambivalent and critical relationship towards our heritage, instincts, and emotions can be crucial for progress.

Furthermore, as it's about truth, it's not about the people participating in the discussion. It's neither about ourselves, hence aspects of ego or loss of face shouldn't play a role if we change our views, nor is it about others we observe in debates. Their confidence, looks,

acting skills, humor, wittiness, likeability, and similar factors, while often decisive in live discussions today, are only distractions that can manipulate and obstruct the path to truth.

A good test of whether we have adopted a balanced mindset is if we are asked about the assessment of a specific situation, do we only list arguments in favor of our views? For any topic, no matter how ridiculous the proposition is, there are always valid arguments for both sides. If we are not aware of them, it means that our mindset is too one-sided.

The second pillar of good debates is *clarity*, covering several aspects:

- **Clarity of debate goals**: It must be clear what the debate is aiming to achieve. The debates' titles often already give a clue: a discussion such as "Relevance of artistic freedom in the 21st century" runs the risk of becoming a high-level philosophical discussion. This can be enjoyable to listen to and has value as an end in itself, but to achieve progress, debates should be specific by *linking them to potential actions*. A debate titled "Shall assisted suicide be legalized?" is action-oriented and already provides the pathway to a scientific approach as it suggests generating a list of PROs and CONs each being assessed based on their weight.
- **Clarity of ultimate goals**: There must be clarity on the value system along which potential actions are assessed. Discussions can go on for a long time without participants realizing that they are arguing from different underlying goals. Declaring happiness as an exclusive goal makes it straightforward (as it's only *one* goal), although it's not required to satisfy this criterion for effective debates. However, if happiness isn't exclusively aimed for, it must be made transparent what other goals play a role, and why.

Clear goals have another benefit: once established, the rest becomes a purely scientific discussion and assessment of which actions will have the highest probabilities to achieve them. *Opinions* disappear and get replaced by *estimations*, making debates much more rational.

- **Clarifying points before moving on to new ones**: The rule to discuss *one point at a time* is essential to making progress. Debate formats where one party speaks for half an hour, making 124 different points, followed by a counter-speech of similar length, making 135 points, the majority of them not relating to what the former speaker said, often cause more confusion than clarification.
- **Clarity of points made:** Arguments should be to the point, brief, simple, and easily understood. It's the task of the speaker (or author, if written) to be understood, not that of the listeners (or readers). If audience members cannot easily repeat what has just been said, the speaker failed to provide clarity. Long-winded, philosophical-sounding answers are typically less a stroke of genius and more an indication of fuzzy thinking.
- **Clarity of terms used**: For points to be clear, the used terminology must be clear too. The juggling of unclear terms, which are either not understood by everybody, or have different meanings to different people, is often used to create fog and escape being refuted. Debaters who are convinced they have good points don't see a need for such unscientific tactics. No matter how sophisticated the point being made is, it can always be expressed in simple terms.
- **Ample time for achieving clarity**: Respondents must have enough time to think about what's being said. This can be a challenge. Even when it's immediately apparent that arguments are illogical or inconsistent, it can still require deep thinking to untangle convoluted thinking and identify the precise flaw in the argument.

> If it feels like a train overrunning the listener, that's probably the speaker's intention, using the fact that the impossibility of a quick refutation is often mistakenly interpreted as the argument having merit. Hence, debates in *writing* can be preferable under certain circumstances as they ensure ample time to respond.

The final pillar for good debates is *logic*. To achieve that, it's best to leave emotions out of debates, as they can muddle clear thinking. Emotions are relevant as an outcome of debates and decisions (as argued in this book they are the *only* relevant outcome) but are mostly a hindrance for rational thinking during debates. The rule of logic also includes the prevention of all the common flaws in reasoning, including circular arguments, invalid generalizations, *ad hominem* arguments, confusion of correlation with causation, arguments from authority, and several others. For now, only one logical concept shall be discussed in more detail, as it's important, and often not properly understood: the difference between theory and practice.

To get a grip on ethical questions, it makes sense to reduce the complexity by breaking them down into two steps. First, by analyzing them in a theoretical, *ceteris paribus* state, where there are no effects beyond the core matter which is being discussed. Similar to an experiment in a laboratory, which is protected from outside influences, the matter is treated as if in a vacuum, to understand its core characteristics. Only in the second step is it set into a practical context, where other factors are taken into account.

For example, when discussing a topic such as abortion, in the first step, it's analyzed if there are any intrinsic reasons why it may be objectionable. Assuming that there are not, it doesn't yet imply that it should be permitted in practice. For example, it could be

argued that it may lead to an erosion of the value of life which will manifest itself in situations entirely unrelated to abortion, causing significant harm. For such an argument, and similarly for all others, evidence needs to be provided—for example by stating empirical studies where people were repeatedly unable to make a distinction between a certain rule, and related situations that were somewhat similar, but not in scope of the rule being discussed. This way, arguments get corroborated scientifically.

Analyzing matters first in a theoretical environment allows free, open discussions without introducing too early practical objections that can be disruptive to getting to the bottom of an issue. The actual recommendations on what should be done are only determined after it has passed many other checks—the "wall of 1,000 filters" (see Fig. 14).

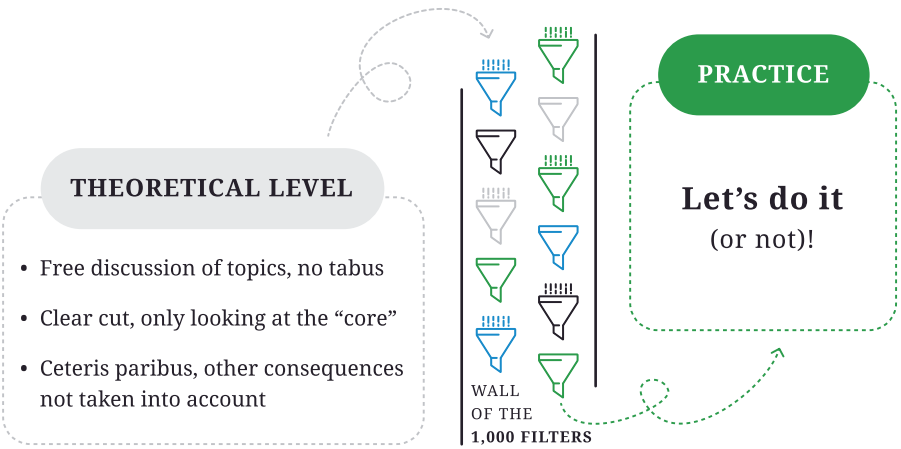

Fig 14: Possible actions should be discussed freely in theory, but have to pass many checks before being implemented in practice.

On the theoretical side, *everything* must be allowed to be discussed. Otherwise, the question becomes of who decides what shall be allowed to be discussed, and what shall not. This especially applies to views that are closest to us, as those are often inherited and unquestioned. Having no tabus also means that ridiculous propositions like "Shall a nuclear bomb be dropped on Munich, Germany?" are permitted to be discussed if asked for.[i]

Whenever somebody wants to prohibit the discussion of topics, be it for cultural, religious, or just "out of principle" reasons, alarm bells should go off. Not only because this suppresses freedom of speech, but because it's a first, strong indicator that the held position is flawed. If one had the arguments on their side, there wouldn't be any need for hiding and trying to protect one's position this way. Quite the opposite, one would happily discuss it at every opportunity. Despite running the risk of overdoing it with parallels to science in this book, here's another one: if you take a fact that science has considered to be the "truth" for centuries, such as the Earth being round, and you challenge it with good arguments and prove that the Earth is flat, then (true) scientists will eat it up with vigor, and be the happiest people in town for having been proven wrong and for having learned something new. Dogmas, on the other hand, are the exact opposite, and shouldn't have any place in modern discussions.

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i On the PRO side, German football may become more exciting again as Munich's biggest football team has been dominating the league for over a decade. However, that probably wouldn't outweigh all the points on the CON side—it will need at least one or two more solid points on the PRO side. To prevent any potential backlashes to this statement, it may be wise to add that the above proposition isn't meant in all seriousness, corroborated by the fact that the author's parents are living in Munich (and the author is on good terms with them).

With the concept of the separation of theory from practice in mind, debates gain clarity because the participants need to specify whether they find a proposed action objectionable on a theoretical level or only when it's set in practical context (and why), thereby preventing argumentation that's an unclear mix of both. Incidentally, this concept doesn't imply a bias towards inaction, as possible actions first need to go through rigorous checks. The same applies to inaction, since omission is just as much a decision as taking action. The main differences are that it's easier and that the assessments of what happens in case of inaction are typically better understood, as that's often the status quo that can already be observed.

The explicit step of thinking about all practical implications is crucial, as it acknowledges the complexity of the world we live in, and forces holistic thinking. Selfless acts of kindness such as rescuing animals, only to feed them for the rest of their lives with meat from factory farms, or the donation of clothes to poor countries destroying their local clothing industry, show that well-meant actions can have unintended negative outcomes.[i] Effective giving is therefore often described as an art, although a more accurate term is probably that once again, it's science.

On a practical side, it would be too complex for every individual who wants to do good to try to figure out all the complexities themselves. Therefore, it's important to provide guidance, for example by researching effective forms of giving and providing this information

i Both examples don't imply that those actions shouldn't be taken. It's only emphasized that action has to be thought about holistically, and that measures should be taken to prevent negative side effects. This is almost always possible, as long as one recognizes that those effects exist.

for free. This has already started with the Effective Altruism movement[105] and should be further expanded.

Coming back to *logic* as a pillar of good debates: it's usually easy to make participants agree to it formally, but ensuring that it's adhered to throughout the debate is another matter. This isn't so much because of a lack of logical thinking skills, but about the motivation to reason rationally. Logic is a powerful device that has the tendency, like any other tool, to only be used when it suits us. For instance, if people who consider themselves rational thinkers are asked why they don't believe in a god, they may refer to a lack of evidence, or that the thousands of different gods people believe in are all mutually exclusive, or that it could not be a good god(s) considering the horrific things happening every day. But are those the actual reasons? If their brains were wired in a way that gave them a deep satisfaction (or ease of pain) from being religious, or if they had been raised religiously so that giving up faith would mean breaking—at least on some level—with their friends and parents (which is hard to do, considering parents gave the gift of life, and hopefully many years of love and care as well), who could guarantee not to sacrifice logic for happiness?

This isn't meant to be a valid excuse from arguing rationally—without logic, there's randomness and debates become impossible—but a reminder that people strive for happiness, not logic, and that there should be an understanding of why people may deviate from logic in debates, as it is, from their perspective, the logical thing to do. Incidentally, religion is only one example. This phenomenon affects everyone, no matter how rational we consider ourselves to be. Every time we become intentionally fuzzy in debates is another example, and with a bit of thinking everyone will find several more instances where they preferred happiness over logic.

Logic is fragile in other ways too; it seems to prosper only within certain ranges. If matters are too extreme, people throw it overboard entirely. Taking as an example how humans treat their pets vs. how animals are treated in factory farms: if the number of factory farm animals was not that large, and their treatment not that much worse, there's a good chance that people would understand the contradiction more easily and take actions accordingly. However, as it's too extreme, logic gets switched off.[i]

Concerning all pillars for good debates (mindset, clarity, and logic), their frequent violation makes today's debates often futile. To prevent this, it could be helpful if participants agreed to those at the beginning of the debate. For important debates, it may be suggested to mandate independent evaluators or committees who act neutrally on the matter being discussed, and solely focus on keeping track of the extent the rules of debate are adhered to, providing feedback to debaters or audiences. This could raise the level of debates, making them more effective.

Happiness Through the Back Door

While debating can convince others to do good, it's not always effective. Sometimes, no matter how good the arguments are, people don't follow if they cannot see clear and strong benefits for themselves. To overcome this, a solution is to simply provide such benefits, thereby

i Politics is another example: appealing to emotions instead of reason can be very effective, and in such cases the fabrication of stories—no matter how ridiculous—doesn't only lead to no reputational damage to the politicians who use those tactics, but it's conducive to their cause as they prevent people from falling back to applying logical thinking. If narratives are too crazy, people start believing them again.

incentivizing people to take actions that increase happiness, even though from their perspective it's only a welcome (if at all) side-effect.

One such example, with a potentially enormous effect, is the production of artificial meat for consumption, also called cultured meat. While the main impact (from a happiness perspective) is that it could make factory farming obsolete, other benefits may be the actual drivers for wide adoption:

- **Tastier**: Once meat can be cultured, its composition and ingredients can be defined, making it similar to, for example, *Wagyu beef* which is considered more delicious than regular meat.[106]
- **Healthier**: Creating meat in the sterile environment of a lab is considerably cleaner than factory farming where animals have to live in their waste or get infections from bacteria entering untreated wounds, for example. This, combined with treatment with antibiotics and other medicine eventually poses a health threat to humans.[107] Also, as the ingredients can be freely chosen, cultured meat can be made much healthier than conventional meat, making doctors prescribe it instead of proscribing it. (Considering the unclean conditions in which animals are reared for food, it's surprising that some people express that meat coming from clean laboratory conditions would trigger a "yuk" feeling, while it should be the other way around. This assessment is probably due to a lack of knowledge of how most animals are reared for food, as well as a general aversion towards new things, in the same way as raw fish (sushi) was considered too exotic in the western world for a long time.)
- **Cheaper**: While the price of 330,000 USD for the first cultured meat hamburger in 2013 didn't make many people salivate, prices have gone down significantly to around 10 USD today[108],

and the trend is expected to continue, eventually becoming more affordable than conventional meat.

- **Environmental benefits**: Conventional meat production accounts for around a third of all greenhouse gas emissions, while such emissions could be 78–96% lower for cultured meat, requiring 99% less space.[109] Apart from the direct positive impact on the environment, another benefit is that it can be a strong motivator for pursuing cultured meat production, as the topic of the environment is currently at top of mind for many.

Therefore, supporting non-profit organizations like New Harvest[110] or The Good Food Institute[111], whose main aim is to accelerate the development of cultured meat and other meat replacements, can be very effective.

Similarly, for every action that has been identified as increasing happiness, it should be analyzed what other incentives exist to make people support the cause. Appealing to being good alone rarely convinces everyone.

Assessing Impacts on Happiness

Today, even though many would agree that we should aim for the most happiness, possible actions are often not analyzed rigorously for how much happiness they would achieve. Many effects, be they positive or negative for happiness, don't get taken into account.

This is the case on every level where decisions are made. Starting from the highest, political level: if asked which political decision in the last decades had the most important effect on overall happiness,

probably only a few would mention China's one-child policy, even though it's probably ranked among the most important decisions, considering China's slight above-average meat consumption per capita[112], and its low standards in animal welfare[113], which especially also apply to factory farms[114].

What those insights lead to, in terms of proposed actions, is an entirely separate question. It would certainly be an unfamiliar picture if animal rights activists started campaigning for such decisions which are not directly related to animal rights. However, if those decisions move the dial the most, can they be ignored?

An example of a decision on an individual level that may impact happiness significantly, but is often not taken into account, is to eat beef or pork rather than chicken, for the simple reason that it takes many more chickens to provide the same amount of meat. While it's understandable that animal rights activists don't lean towards the propagation of beef or pork consumption, practical thinking and *realpolitik* may be called for. Such pragmatic thinking is already happening in various ways, one example being the Meatless Monday initiative[115] which is targeting smaller steps, and more realistic goals, than calling for changes that may be perceived as too extreme and hence be ignored altogether. At the end of the day, the relevant question is always which actions reduce suffering the most.

As always, this book doesn't make any final proposals regarding possible decisions (for that, all the practical implications must be assessed). The examples above should only illustrate the important principle of thinking holistically to identify the actions which are most likely to increase happiness.

The Launch of Happiness Engineering

Up to this point, the focus was mostly on the negative: how to reduce unhappiness. That's not this book's fault—it simply reflects the scale of suffering in this world, and that reducing unhappiness has priority considering the unevenness of the happiness scale. However, now it's time to brighten things up a bit.

As mentioned before, while happiness isn't nature's goal, nature also doesn't set a limit to happiness per se. This fact can and should be used to increase happiness systematically. The first step is to further increase the gains from inherited sources of happiness, which humans have been doing for a long time, as in the example of sex with contraception: taking a source of happiness (sexual pleasures) and applying strategies to prevent unwanted outcomes (for humans), therefore being able to pursue it more extensively, or with a higher degree of pleasure.

The fact that nature never intended this doesn't seem to bother humans, nor should it. Nature is randomness without mercy, not intrinsically good, and there's no reason for feeling obliged towards nature in any way. The only practical aspect that has to be taken into account is that nature may have mechanisms in place to soothe the effects, thereby limiting the gains. Hence, as products of nature, we still need to "listen" to it and understand how it works to prevent negative repercussions.

When artificially leveraging our inherited sources of happiness, there's always the risk that there are unwanted consequences. For example, eating food with artificially high levels of sugar is another unnatural way we increase our happiness; however, it may lead to

obesity and other negative outcomes. Nevertheless, just like with any other challenge, we simply need to find solutions, which we probably will—be it food that doesn't cause weight gain, or that has an in-built mechanism to cause the feeling of satiety, or similar.

Such strategies are self-evident, which is why humans are already pursuing them, though maybe not as systematically as possible. Every source of happiness should be analyzed rigorously for ways to enhance it. For instance, if it was better understood why music makes us feel good, it could open up new paths to create new pieces of music, or even entirely new forms of music, which are highly rewarding, without having to rely on the occasional flash of genius by musicians. Going through all our inherited sources of happiness, applying a scientific approach to find out how to get the most out of them, and allocating research budgets accordingly, would probably identify interesting new ways to increase happiness. The first step is to set this as a clear goal, otherwise it will not be pursued with the same level of determination and focus.

The next level of creating happiness is to stimulate the brain in direct, chemical ways. This is already possible today, with drugs. Unfortunately, drugs have many drawbacks, one of them being that after intake has been stopped, or not increased, the pendulum swings the other way, causing misery. Also, even the "happy phase" carries risks. While on drugs, individuals neglect other aspects of their lives (the incentive to do anything else is comparatively weak), creating issues for themselves in the mid- and long-term, as well as for their family, friends and the world around them.

However, what if a happiness pill was developed that triggered a constant, elevated state of satisfaction without addiction or any

other negative side effects? (There are already pills today that impact happiness, and which can be used responsibly, especially to counteract severe chemical imbalances in the brain, e.g., to treat depression; however, what's being referred to now is a happiness pill that could be safely taken by those without any illnesses.) Not only would it instill happiness in those who take it, but have positive reverberations on society as a whole, due to the *happiness begets happiness* effect. The impact would almost certainly surpass that of other revolutionary pills humanity has already invented and is using on a continued and increasing basis, for example, the contraceptive pill.[116]

The path to such a happiness pill may not be straightforward, both from a scientific perspective (tricking nature consistently may be difficult due to soothing effects) as well as the assessment of its practical ramifications. However, the chances of acquiring such a pill don't increase if we don't look for it in the first place.

Concerning the practical implications, a happiness pill wouldn't have to be used on humans first. A *soft launch* could be to administer the pill to those who don't have much to lose, for example, animals in factory farms. (For them, more effective painkillers would already be a godsend. Obviously, it would need to be ensured that those don't have any negative impact on human health when the meat is consumed.) This should not be confused with conventional animal testing that aims to use one group (animals) for the benefit of another (humans). It would be for the sake of the animals' happiness.

Also, a step-by-step introduction may be possible for humans even before a perfect happiness pill is developed. Let's imagine that humanity succeeds in sustaining the positive effect of drugs for several years, but still fails at preventing the negative effects once

this phase is over. What if a person had an accident and fell into a semi-conscious state without chances for recovery, with still a few years expected to live? Would it be justifiable, or even preferable, to create a drug-induced, highly positive happiness state? In the end, it will be the affected individual who has to decide. (As the individual may not be able to express their will anymore, it will have to be clarified beforehand. The option to experience the artificial happiness state will be one more question on the living will template.)

This doesn't only apply to accidents. Many people, when life isn't enjoyable anymore, and death isn't too far away, wonder why they should keep going. What if there was the option to switch to a state of maximum happiness for the remaining time? Finally, there would be a happy end. Today, there's no happy end.

Using drugs to create artificial happiness states of maximum intensity may not be the only way: any form of artificial brain stimulation may achieve it. The thought of ending up as a brain in a gelatinous substance, getting stimulated artificially by a computer (similar to the movie *The Matrix*), may feel strange, causing some people to decline this option as a first reaction. However, once experiencing such a state of maximum happiness, almost everybody would change their mind instantly. An objection may be that the other self—that receives the artificial stimulations—is in a state of illusion, like a drug addict, and hence cannot make clear decisions. However, to that it could be said that we are always in a state of illusion, as what we experience is never reality itself, but our re-created, highly approximated version of it. Also, the version of ourselves that experienced the artificial state of happiness has a major advantage: it knows both experiences, while our other self only knows one.

Another form of happiness engineering could be gene modification, driven by the insight that genes are a major contributor to a person's happiness[117]. While such a modification would be artificial on the face of it, it would mean nothing other than helping those with an unfavorable gene pool to get on par with those who happened to be luckier. Assuming it was possible, and there were no risks of any kind, could it be justified not to make this intervention, and cause people to be less happy than they could have been? In those cases, only the (expected) will of the affected person matters, and it can be taken for granted that they would opt for a happier life.

The third level of artificial happiness is the creation of new sources of happiness. The measures above, even though artificial, are still leveraging the sources of happiness we inherited, rooted in evolution. However, maybe the creation of entirely new sources will be possible one day? Maybe it will be possible to create such extreme forms of happiness that the positive side of the happiness scale is extended, making it as strong as the negative side, and therefore be, for the first time, actually in balance?

The answer is: we don't know. Making predictions is difficult, especially, as Danish physicist Niels Bohr famously said, when they are about the future. That said, even if we don't know what the world will be like in five years from now, it's not out of the question to make statements about the world in 500 years, as some overarching trends are outright logical, and that applies to the development of happiness too. We have a very strong incentive to increase it (it's even the incentive itself), we have done it in artificial ways for a long time, and scientific and technological advances will enable us to become more and more sophisticated at it.

How soon will those changes come? Nobody can tell for sure. In general, the speed of technological advances is increasing. However, neither do we know how many roadblocks will show up along the way, nor how long it will take to overcome each of them. For the big ones, it may require moments of individual epiphany. History is often made—both in the negative, such as wars or genocide, as well as in the positive, such as breakthroughs in science or technology—by individuals[i], making timeline predictions difficult. Eventually, though, no matter how bumpy the road, and how many setbacks there will be, major advancements will happen. That's because knowledge, once public, can hardly be eradicated again. Only the physical output of knowledge can be destroyed, such as the demolition of textile machinery by the Luddites in England in the 19th century. However, those actions don't turn back the clock, and don't stop progress. Another matter is if humanity was wiped out as a whole, by diseases, a comet, or nuclear war. It will still happen eventually, either when new intelligent life forms on Earth, or somewhere else in the universe, for example on one of the many billions of other Earth-like planets[118]. The logical process in a nutshell: life happens, then consciousness, thinking, and an incentive system evolves, and eventually the affected individuals find ways to control the incentive system at will.

To that, we can look forward to, both as humanity as a whole and as individuals, enjoying at least the little innovations in our lifetimes, as they keep happening continuously. Regarding major advancements in the far future, which will make heaven on Earth possible, how shall we

i It could well be that if Einstein had not conceived of general relativity, we would still not know about it today. Why can some advances only be made by individuals, not in groups? Maybe Einstein gave the clue himself: he stated intuition as a main guide for his insights, which is largely a sub-conscious process that cannot be brought entirely to the surface, and expressed in words so that it is shared with others, which is a requirement to work on it collaboratively.

think about it? Most likely ambivalently: on the one hand, it's the best news imaginable, on the other, as long as we are reading these lines in the 21st century, we were probably born too early to experience it. However, there's no reason to complain. Considering our standard of life, most of us are blessed to an unbelievable degree compared with the billions of ancestors who lived through much rougher times, and the many other humans and non-humans who live today.[i]

All Eyes on You

When the horrors of the Holocaust became apparent after the freeing of concentration camps by Allied forces at the end of the Second World War, attention quickly turned to the question: who exactly was involved, and who was responsible? And also: who knew what was going on?

This last question is living on to this day. German children who learn about it in school ask their (great) grandparents this question. The answer is often a bit fuzzy—not because of a lack of honesty, but because it's not straightforward. Yes, there may have been rumors floating around, but at that time, information was difficult to acquire and discern from fake propaganda considering the limited communication technologies, censored information[ii], and the general chaos of war.[119] On almost everybody's mind, including soldiers, there

i There are other ways to look at it as well: similar to the beaming thought experiment, future generations can be regarded as different versions of ourselves, hence we'll participate in it – it's only a question of definition.

ii The Holocaust was not pro-actively communicated to the German population while it was ongoing. Hitler tried several times to make the masses of the general German public to go after Jews (e.g., *Kristallnacht*), however those failed. It's not a coincidence that the concentration camps where the majority of the gassing of Jews occurred weren't on German territory, but

was only one question: no, not how to win any battles or the entire war; but "How do I survive this war?" Looking away from what may happen elsewhere was not only to deal with more immediate issues at hand but also because as an individual, the chances for changing anything about it were slim. A few tried—and almost all paid with their lives for it[120], without having any impact.

Things have changed—to some extent.[i] Today, there's also suffering happening on a large scale. This time, though, there aren't any doubts anymore we can use as excuses. Maybe there were still some before reading this book. However, those are gone now: you will never be able to claim you didn't know, be it the scale of human-induced suffering which you may even support, or that you didn't realize how bad it feels, or even that you didn't know that your actions can have an impact. Burning this book or erasing it from your hard drive doesn't help: you cannot unknow it anymore, and you cannot evade responsibility.

Thankfully, we don't need to risk our lives anymore to make a change. Simply refraining from acts that cause unhappiness is a great start (be part of the solution, not part of the problem), and pro-actively doing good, even if it's only a few dollars donation, can already help. Remember: you don't need to save every being on this planet: changing one individual's life already means improving an entire world. And

in Eastern Europe, in desolate places among forests to contain the information of what was happening.

i Drawing parallels to the Holocaust, one of the most horrific happenings in human history, neither means to equate it with anything that is happening today, nor belittling it. The perception of belittling only arises from the assumption that happenings with which it is compared with are insignificant. Hence, those who accuse of belittling only become guilty of belittling themselves.

there are also direct incentives for us: helping others can be one of the most rewarding and long-lasting sources of happiness that exists.

Many things need to get done, and no matter what your preferences or skills are, there's something for everybody. Have a look at the book of work at IncreasingHappiness.org/contribute, join the community, make new friends who share the same values as you do, and get started.

The future can be happy—if **you** make it that way!

Afterword

If you found this book insightful, thought-provoking, or just an interesting read, then **please** share it with another person who may also be interested in it. Everybody knows at least one, and if you know more, even better. The digital version of this book is available for free at IncreasingHappiness.org. Thank you!

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