

# On Theory



# On Theory:

## *Brain-Mind Teleology and the Failure in the Success of the Human Use of Science*

By

Richard J. Arend

Cambridge  
Scholars  
Publishing



On Theory: Brain-Mind Teleology and the Failure in the Success  
of the Human Use of Science

By Richard J. Arend

This book first published 2019

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Copyright © 2019 by Richard J. Arend

All rights for this book reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner.

ISBN (10): 1-5275-3270-4

ISBN (13): 978-1-5275-3270-0

*for Mom and Dad,*

*for Damon, Holly and Ruth*



# TABLE OF CONTENTS

Acknowledgements .....	ix
Introduction .....	1
Chapter One..... Why Reality?	18
Chapter Two..... Why Knowledge?	28
Chapter Three..... Why Theory?	39
Chapter Four..... Who Theory?	50
Chapter Five..... When Theory?	64
Chapter Six..... Where Theory?	74
Chapter Seven..... What Theory?	90
Chapter Eight..... How Theory?	128
Chapter Nine..... How/What Not-Theory?	147
Chapter Ten..... Meta-Matters and the Future	170
Chapter Eleven..... WindUp	183

References ..... 193

Index ..... 198



## ACKNOWLEDGEMENTS

I am grateful to my family and friends for inspiring and supporting my efforts in writing this unique book. The perseverance, good-humor and love of my children were an inspiration. The wisdom and support of my spouse were wonderful. The spirit and academic mindsets of my parents lit a path. I thank my bro Jeff and his family Windy and Jenna, and friends Mike, Wolf, Dirk, Anne, Sergio, Phil, Tomas, Myles, Chris, Andy, Per, Moren and many co-authors from past work, as well as past mentors and scholars like Dr.'s Brander, Amit, Ross, McGahan, Suddaby and others; I have appreciated their support at various stages of life and have learned from their examples. And, I am grateful to the many muses to be found in philosophy (blu), in art (banksy), in music (tpoh), in theory (AMR), in character (ahsoka), and in the goodness of our fellow planet inhabitants. Thank you.



# INTRODUCTION

*When given the choice of 'the' or 'y', always take it.*

## Introduction

In the movie *Grosse Pointe Blank*, when Debi blurts: “*Don't. I don't wanna hear about the theories. I wanna hear about the dead people. Explain the dead people...*” she gets directly to the reason for this book. There is confusion not only over *what theory is* (i.e., why theory differs from explanation in Debi’s mind) but also over *how it is used* (i.e., why Debi thinks theory’s effects on real life are not as important as other causal explanations for dead people). This book provides the needed clarity.

Why is there such demand for clarity now? Because the confusion level is newly high and the stakes are newly large. Theory-as-empirically-supported-science is losing its power in an era of *alternative facts* and cherry-picked evidence. There is a growing misunderstanding about what constitutes a valid basis for important decisions. That resulting confusion is being exploited for harmful purposes, at increasingly intolerable scales, for the benefit of simply too few.

Besides the evident confusion in the public realm, there is a surprising level of puzzlement over *what theory is* even among academics (i.e., among those who ‘do theory’, use it, and critique it). The latter seems needless, although an alternative and cynical explanation is that there is a strategic opportunity for some scholars to lay claim to new types of theory, or question whether a rival’s new theory is still theory, and so on. It would be useful to brush that aside given the serious range of new, important challenges approaching humanity ever more rapidly – in the forms of singularities (Kurzweil, 2010), *three zero* goals (Yunus, 2017), and the rather foreboding discontinuities that await humankind arising from the increasing skillsets of AI+robotics (Reese, 2018). So, it would be great if we could get our collective shit together to avoid fucking it up badly (just saying) by seeing theory as one of the main concepts that should undergird our beneficial togetherness (can I get a kumbaya up in here?).

### ***The Purpose of this Book***

It is crucial to provide some *millennial clarity* to what theory is and how it is used because theory underlies what humans are and what humans do. Even more so, it seems vital to ask why-the-fuck do we still make strategic decisions based on non-theoretical, non-scientific belief systems, or why do we have such trouble predicting significant voting outcomes, or why do we not have less corrupt, more responsive systems of social governance? We need to be able to answer such questions not in isolation but in light of the fact that the very same elements of ‘doing theory’ (i.e., as expressed in the use of observation, logical reasoning, model-building, testing, communication and implementation) can give us AI, MNCs, smartphones, Saturn flybys, quantum computing and thermonuclear weaponry. How can humankind be so backwards and yet so forwards when the thing (i.e., theory) that underlies the latter is available to address the former? It is time to stop the hand-waving and the shock’n’awe, and get real... and this book is meant to do just that.

### ***The Audience for this Book***

This book is written to inspire newer academics – our future theory-builders. It is meant to provide perspective, purpose and hope. This book is also written to prod current academics, policy-makers and other intelligent readers to spark a heated and action-oriented discussion of the issues and challenges for creating and using theory better to improve the human condition.

### ***The Explicit Premises of this Book***

[1] *What Theory Is*: theory is an explanation of how a focal phenomenon works (i.e., a technical description taking on forms including cause-and-effect, sequence, meaning and typology) that is communicable to others, resulting in the advancement of its understanding that is new, non-obvious and useful (i.e., usefulness which is normally ascertained through the improved prediction and control of the phenomenon). This definition is further expanded upon in the Chapters that follow<sup>1</sup>.

---

<sup>1</sup> Adding theory to a field is hard; reading it, applying it, and even writing it out formally should *not* be. It *should be difficult* to displace working knowledge with something purportedly better for several reasons, including: the effects on those currently using that working knowledge: the short-term costs arising from the

[2] *Ideal Imperfection*: theory is a self-correcting concept. Ideally, theory should be trusted to provide the best current explanation of phenomena because it is under constant scrutiny. Given any explanation represents a simplification of reality, theory is always open to modifications that correct for un-modeled complexities, both previously known and previously unknown. Such modifications arise as new knowledge is gleaned from both inside and outside the focal field. Such modifications also arise from the explicit disagreements over choices in the existing simplification that can be molded into empirically testable alternatives. The possibility of questioning the veracity of existing knowledge is one characteristic that explicitly delineates theory (and other forms of logical reasoning and scientific thought processing) from magic, religion, gut-feelings, social norms, and hand-waving. Trust occurs through critical analysis, and not through blind devotion.

[3] *Teleologicality*: the *brain-mind* – the neurobiological organ and its embodiment in each individual’s thoughts – was developed to theorize. It has evolved to simulate the world(s) outside of itself [the real one on our physical planet earth, as well as others in digital and verbal forms], through inputs from senses (and their extensions), in order to improve, selfishly, its own condition (and that of its host body). This specific functionality gives rise to many *limitations* – both at the individual level and at the inter-individual (i.e., social) level. These limitations can be represented in both real and abstract forms. To the latter, the limitations even lead to questions about whether what the brain-mind models (i.e., as

---

replacement process for those making the shift; and, the fact that there will always be late- or never-adopters who push back when their ideas-as-identities are threatened. Thus, theory should strive to be *constructive in its disruption* (Steiner, 1988); it should empower more people with better understandings of phenomena while taking power away from past experts who relied on their private tacit knowledge advantages. And, *theory should be theory* – theory should be standardized in its function of explaining a phenomenon – in order to leverage the benefits of such universality (e.g., in communication, clarity, and cross-disciplinary idea exchange). It should strive to do so without any diminishment in the creativity of how to get to that explanation or of how to describe the relationships among units in the phenomenon or of what phenomena to analyze. Theory should be humble, acknowledging that it is a cumulative effort, built on the shoulders of many who have contributed to thought, philosophy, instruments, data-gathering, model-making, and experimentation in the past (i.e., given theorizing has been going on since at least 470 BC – Morgan & Morrison, 1999; Steiner, 1988). Most importantly, theory should be pursued for good, as a means to *expand the pie* for humankind to share.

a collection of interconnected relationships among delineated factors) represents what reality actually is.

[4] *Shared Reality*: it is assumed that you exist, this book exists, as does the force of gravity; in other words, both directly and indirectly-sensed things surround us and we can agree that they really do. We can resolve disagreements about specifics of such things through appeals to even more basic things like measurements and logical reasoning-based inferences. We can regress to a set of explicit premises that state a shared agreement about the existence of the most basic things. We can test the deduced hypotheses and modify that set as needed. Regardless, little value can be achieved without a shared reality.

[5] *Inefficiencies Abound*: the current real world is immersed in the inappropriate traditions that institutionalize inefficiencies. Efficiency demands that we shift power to transparent, informed, debated choice, so that all affected stakeholders can vote on laws, in a true democratic fashion. (This is immediately possible to implement in most democracies given access to the same secure, smart devices we use for other personal and verified transactions, like banking.) Efficiency also demands that the identity of *sources of facts* be provided when possible (which is increasingly possible due to digital records), that we have control over the information stored by entities that access us, and that we can compare the discretion applied by public entities against objective AI-based recommendations. There exist readily-available tools to take the inefficient politics, informational asymmetries and sloppy heuristics out of many of our most powerful and expensive systems; but, even when the science and the theory recommends doing so, something (i.e., what we label as *inefficiencies*) stops it from happening.

[6] *Accountability is Lacking*: one cause of the stable inefficiencies that exist despite scientific and theoretical arguments for addressing them is that the humans with the power don't feel a responsibility to take action. Too often, institutional systems are built to reward *hacking* (i.e., finding and exploiting the loopholes in the rules or systems) by abusing science (e.g., through high-speed trading, cyber-espionage, and so on), and by leveraging the lags in the rules (e.g., as Uber and Airbnb have with allegedly skirting safety and rental regulations). Such systems incentivize solving the wrong problems with the tools of theory and idolizing those who succeed; worse, these systems hold no one accountable for not foreseeing the hacking, for not defense-testing against the hacking, and for not responsively adjusting to the hacking.

Astonishingly, accountability is lacking even outside of the hacking. It is lacking in many scientific fields where the sociology and the economics of research have promoted an inefficient focus on novelty and on commercial interests (with a consequent lack of focus on risk assessment, on replication, and on social interests). One dramatic result is a disappointing, if not devastating, lack of impact of scientific knowledge on the policy decisions involving global warming, gun control, democratic representation, cyber-security, privacy, taxation, human rights, liability protection, justice systems, sexual harassment, discrimination, medical treatment, and so many other phenomena (which are often better investigated and exposed on comedy-news shows, from *Adam Ruins Everything* to *The Daily Show* to *Full Frontal* to *Last Week Tonight*).

That lack of accountability can arise from many sources, including pathological reward systems, organized corruption and delinquent oversight. It is distressing that it also emanates from individuals lacking humanity, professionalism, or seemingly any sense of moral obligation; of course, what is worse is when such individuals have risen to positions of power because of such characteristics, and more so, when they are protected by the perks of such positions (e.g., free legal defense, sovereign immunity, and so on). Perhaps saddest of all is the fact that it is almost impossible to obtain and publicly expose their alleged questionable behavior in terms of identifying the specific pieces of evidence and reasoning upon which significant harmful decisions were made; saddest, because without such data about this phenomenon, we cannot then properly theorize about it in order to best address it.

[7] *Disagreements are Expected*: theorizing is a process, an imperfect process that produces an imperfect outcome, and so it is expected that arguments will occur over which imperfections to tolerate and when. Thus, we expect disagreements over judgments and beliefs, and even over facts. We expect disagreements over judgments because calculations can vary due to honest mistakes, added factors, weights given to factors, timing, perceptions over new application areas, and so on. Many of these reasons stem from differences in underlying goals and values. We expect disagreements on beliefs about those goals, values, and foundational premises. As long as their bases are made explicit, there can be intelligent debate which can be resolved through comparative testing or through synthesis. We can even expect disagreements on facts due to the questions over their bases in reality – for example, due to concerns over the legitimacy of the underlying data, measures, methodological biases, and so on. (Note that this is **not** an *alternative facts* story. Not all empirical

observations will align with a statistically supported relationship, and those are not alternative facts-as-observations. However, independent studies can and do differ in outcome, as many recent replication studies have surprising indicated. But those are also not alternative facts; they are simply more data to add to our knowledge of a phenomenon, indicating that a better explanation of it is needed). The sharp point is that the source of the disagreement (at any level or step of the explanation or phenomenon) needs to be identified so that it can be debated towards a resolution, making it less likely that deceptions and mistakes can continue to influence related decisions and actions. The problem, however, is that most humans don't appreciate such intrusive, direct questioning about their thought-processing – often for fear of looking bad, or incompetent, or ignorant, or influenced. And, there is a related problem – that more often than not, there is no power to compel answers to those questions. The default position, it appears, is to value the secrecy of a decision-maker's process over the stakes involved in that decision. It is difficult to imagine that the *fourth estate* cannot do a better job in questioning powerful decision-makers on their process, sources, premises, and methods, especially when they are public servants. Is there some valid reason to believe that the decision-makers who don't answer the questions will automatically be voted out?

[8] *Every System is Breakable (if not already broken)*: one of the powerful ideas behind theory is that *understanding is actionable*. That means everything humans can understand can be manipulated, as well as ironically any *thing* that exists to restrict those manipulations. Such things include markets, rules, regulations, reputations and performance-based rewards. *Markets* have well-documented theoretical and real failures (e.g., consider the US health insurance market) due to not-so-uncommon factors like market power, negative externalities, and informational asymmetries. *Regulations and rules* have well-documented theoretical and real loopholes (e.g., due to incomplete contracting and lags for politicians to comprehend technological progression), in addition to significant challenges and corruption in enforcement (e.g., in detecting rule-breaking, in prosecuting it, and in penalizing it while victims suffer) and in its oversight. *Reputational recording* (i.e., the tagging of bad behavior to individuals and organizations) can be thwarted through money and time (e.g., using spin, deception, false attribution, attacking the accusers, advertising, appeals to the base, voter disinterest and short memories, a lack of competition, corruption of what is reported, lack of oversight, and so on). Even *performance* as an indicator of success is often corrupted; case after case indicates that assessment systems are all too easily



manipulated (or bribed) when stakes are sufficiently high and perpetrators are sufficiently mean (e.g., Lance Armstrong) especially in organizational cultures imbued with fear, guilt and revenge.

**Table 1 – The Explicit Premises of this Book**

<p><b><i>What Theory Is:</i></b> theory is an explanation of how a focal phenomenon works that is communicable to others resulting in the advancement of its understanding that is new, non-obvious and useful. Most importantly, theory should be pursued for ‘good’, as a means to ‘expand the pie’ for humankind to share.</p>
<p><b><i>Ideal Imperfection:</i></b> theory is a self-correcting concept because it is under constant scrutiny. Given any explanation represents a simplification of reality, theory is always open to modifications, modifications that arise as new knowledge is gleaned from both inside and outside the focal field The possibility of questioning the veracity of existing knowledge explicitly delineates theory from magic, religion, gut-feelings, social norms, and hand-waving. Trust occurs through critical analysis, not blind devotion.</p>
<p><b><i>Teleologicality:</i></b> The ‘brain-mind’ was developed to theorize. It has evolved to simulate the world(s) outside of itself through inputs from in order to improve, selfishly, its own condition.</p>
<p><b><i>Shared Reality:</i></b> it is assumed that you exist as does the force of gravity; in other words, both directly and indirectly-sensed ‘things’ surround us and we can agree that they really do. We can finitely regress to a set of explicit premises that state a shared agreement about the existence of the most basic things. Little value can be achieved without a shared reality.</p>
<p><b><i>Inefficiencies Abound:</i></b> the current real world is immersed in the inappropriate traditions that institutionalize inefficiencies. Efficiency also demands that the identity of sources of ‘facts’ be provided when possible. There exist readily-available tools to take inefficient politics, informational asymmetries and sloppy heuristics out of many of our most powerful and expensive systems; but even when the science and the theory recommends doing so, something stops it from happening.</p>
<p><b><i>Accountability is Lacking:</i></b> one cause of stable inefficiencies is that the humans with the power don’t ‘feel’ a responsibility to take action. Too often, institutional systems are built to reward ‘hacking’ by abusing science and by leveraging the lags in ‘the rules’. Such systems incentivize solving the wrong problems with the tools of theory, idolizing the successful, while holding no one accountable for not foreseeing, for not defense-testing against, and for not responsively adjusting to, those hacks. Accountability is lacking in many scientific fields where the sociology and</p>

the economics of research have promoted an inefficient focus on novelty and commercial interests.

***Disagreements are Expected:*** theorizing is a process, an imperfect process that produces an imperfect outcome, and so it is expected that arguments will occur over which imperfections to tolerate and when. We expect disagreements over judgments and beliefs, and even over facts (e.g., due to the questions over their bases in reality – for example, due to concerns over the legitimacy of the underlying data, measures, methodological biases, and so on).

***Every System is Breakable (if not already broken):*** one of the powerful ideas behind theory is that ‘understanding is actionable’. Everything humans can understand can be manipulated, as well as ironically any ‘thing’ that exists to restrict those manipulations. *Markets* have well-documented theoretical and real failures, as do *regulations and rules*, *reputational recording*, and *performance* (e.g., case after case indicates that assessment systems are all too easily manipulated or bribed when stakes are sufficiently high and perpetrators are sufficiently mean especially in organizational cultures imbued with fear, guilt and revenge).

### ***A Solution in Theory***

It would appear that, if we as humans really want to get to a better world for ourselves, that we need a system that leverages the good side of theorizing and mitigates the bad side of behaving. We need to be smartly anti-Tyrell – *to be less human than human*.

What is theory in such a system, though? Consider the three phases from *blue-pill* to *red-pill* to *IR-pill* below. We appear to be choking on the red one.

***Phase 1 – In Your Head:*** the brain-mind simulation machine is isolated to the individual only. Each individual models and hypothesizes about their perceived-through-senses external world in order to improve, selfishly, her own condition (e.g., in terms of survival, propagation, comfort, and so on). Such individual-level, private theorizing is useful in understanding, predicting, controlling and creating stuff, and in taking action, within specific contexts and for specific phenomena that the one individual has and can imagine facing. This individual-level theorizing infers at least two layers of understanding – one layer to model a world of possible contexts, and one to model what occurs in a context (for a specific phenomenon). This level of theorizing appears, from an evolutionary perspective, necessary for any mobile entity to survive in a competitive environment (as contexts change when the entity physically moves). This phase of

theorizing is *not* what we define in this book as theory, primarily because the knowledge is not shared (nor independently verified, nor explored for all possible uses by a heterogeneous audience of potential consumers, and so on).

*Phase 2 – Shared Beneficial Reality:* this has been the current state of theory by our definition; it is a social knowledge-building process involving combined brain-minds, made possible by shared realities (i.e., agreed upon rules, premises, logics, methods, and so on) undergirded by efficient communications (i.e., through precise languages, including mathematics, diagrams, physical models, and other expressions of human senses), trusted relationships, divisions of labor and knowledge, the accurate recording of knowledge, the testing of hypotheses, the smooth replacement of less accurate and less useful knowledge, the promotion of more accurate and more useful knowledge, and the institutionalization of academics in research practices, training and standards like the scientific method. It is also a phase marked by abuses of knowledge, given that *knowledge is power*, and there is a very strong instinct in humans to wield that power asymmetrically (i.e., with intentional harm to other humans, as well as other entities in the environment). This, as indicated above, creates many potentially useful debates (e.g., about valid beliefs, measures, methods, and so on), but unfortunately much more harm in its realizations in bad policy and destructive action. And, this imbalance is only getting scarier as the scale of the latter has increased due to more powerful and ubiquitous technologies that are increasingly controlled by fewer and fewer humans while the affected have less and less voice. What is most notable in moving from Phase 1 to Phase 2 is the magnitude of increases in both benefits and challenges that arise from the move from individual humans to interdependent groups of humans (where such interdependencies enlarge the potential impacts overall and to individuals at same time).

*Phase 3 – Terrestrial:* perhaps the future of theory – where shared knowledge is extended past local groups of humans in mostly verbal and written communication and moves towards faster, digitized, AI-enhanced global (and more diverse) groups of humans, where the earth-based reality we have been modeling is supplemented with engineered realities (e.g., virtual) and new artificial platforms (e.g., GPS, the Internet). Such *super-theory* will likely be needed to deal with the upcoming singularities foreseen regarding the immortality of human minds and bodies, the end of human-involved work, and the capacity of AI and robotics to sustain humankind. *Fixing the bugs* in Phase 2 appears to require extra-human intervention (e.g., to reduce inefficiencies caused by self-interest,

ignorance, politics, ill-formed heuristics and cruelty); and, to many humans, that is both scary and worth some more theory.

### *The Question Moving Forward*

As asked of Hardcore Henry “..or are you gonna stand up, spit it out, and spill some of theirs?”, do we have the courage to rise up to affect change given we have theories for doing so? When we have the supporting data, the logical arguments and the understandings of the relevant parts of the focal phenomena (i.e., we know what we know and what we don’t know), can we then act so as to allow such insightful might to make right? Are there ways to confront the ever-present opposing forces commercially, democratically, legally, or even militarily? Is conflict inevitable against those who resist change from their non-theory approaches? What is the most important beach-head here?

Yes, those questions (and that hopeful direction) have been labeled many things in the past, including problem-solving, entrepreneurship, modeling, and engineering. We will call it theorizing here, given that label – at least in the broad scientific community – is a common thing with a widely-accepted methodology that provides a clear standard for getting to the fucking points of disagreement fast. That seems to be the key to progressing past the problems arising in Phase 2. We need strategies that compel disclosure of information and of identities and of rewards. That may entail a different kind of justice system, and a building of *societal intolerances* against current wide-discretion-in-decisions-that-affect-others, against corruption, and against deception.

### **Table 2 – QUESTIONS, QUESTIONS...**

<b>Philosophical Questions</b>
<ul style="list-style-type: none"> <li>• What is worth knowing?</li> <li>• Can there be more than one ‘practical’ reality?</li> <li>• How do you know that you ‘know’ something? What does it mean to ‘know’ something? How do you know someone else knows something, and so on?</li> <li>• What happens when the self-enveloping snake approaches its goal?</li> <li>• How much simplification into parts can be done without missing out on value of ‘the whole’?</li> <li>• How can humankind be so backwards and yet so forwards when the ‘thing’ that underlies the latter is available to address the former?</li> </ul>

- What does it mean to ‘improve the human condition’ then? Is the potential sufficient or does it need to be realized in a tangible way? Does the improvement need to be on average, or fairly distributed (e.g., can it cause harm to some while benefiting others)? What dimensions of improvement are considered, and can the effect trade off decreases on some dimensions with increases on others? Who judges the improvement, with what oversight, and with which appeal process?
- What if a ‘caveman Einstein’ had correctly contemplated the theory of relativity?
- What would motivate a ‘skynet’, more electricity?

### **Questions About the Nature of Theory**

- Why is there now such demand for clarity about theory?
- What is the ontology of theory?
- What ‘things’ are necessary and sufficient to provide the kind of explanation theory has to provide to produce valuable, communicable control, prediction and understanding of a focal phenomenon?
- What is theory from a cynical perspective?
- Is it more important for a theory to be ‘right’ or ‘worthy’? Or, does science equate prediction, explanation and control with worth and nothing else?
- Is something that has turned harmful (e.g., predicts incorrectly) or newly proven illogical, though, better than ‘nothing’ – or, more expectedly, better than ‘works in progress to new theory’?
- Do we always return to the question of whether ‘theory’ can continue to be written so as to only state what it does with some attempted neutrality? Is it smart to leave the possible uses and hacks of the tool to fiction writers, opportunists and criminals? Is there not an added responsibility for working individually, or collectively, to help ensure the goal of theory is met?
- Is there a hierarchy of phenomena? Is it time to reconsider how the resources directed at, and attracted by, the range of phenomena open to theorization should be allocated? What are the measures that indicate that the current system (locally, nationally or globally) is optimal? Are phenomena always more likely to be viewed, and thus studied, as weapons rather than problems to be solved or pieces of art to contemplate?
- Does every current and mostly static level of analysis need to be modified for time and dynamics or does each need a parallel time-based level? Is there an infinite regress issue moving up levels as well (as there exists moving downwards with reductionism)?

- Is it possible to have a theory to guide ‘theory doing’ that is society-serving and efficient, without removing what is human about the process?
- Will the ultimate limit on social science theory come from the boundaries set by humans as to what is a human life in terms of free will? What is an adequate amount of freedom to a human when AI-based pseudo-theory, or theory alone, becomes very accurate at predicting one’s next decision or action?
- The chicken-and-egg question naturally arises – how does one ‘predict’ relative net benefits to justify theorizing without theorizing?

### **Questions About the Failure of Theory in Science**

- Where is ‘the theory for that’ when impediments are identified in ‘doing theory’ or in implementing it?
- Why does it seem so difficult for science to admit its own biases, and then act to correct for them?
- How harmful is holding on to inaccurate ideas to theoretical progress – is it valuable to provide a tough test of accepted models or a waste of resources to disprove bad, self-serving alternatives?
- What would the explicit endorsement of an ‘ends over means’, ‘anything goes’ approach to theory-building mean? Would it shatter whatever confidence the public has in the legitimacy and expertise of researchers-as-theory-builders (affecting funding, trust, and so on)? Would it affect how we teach the ‘how’, reduce trust in each other’s work, de-standardize the review process, or increase replication study publication? Would a focus on ‘ends over means’ affect the type of phenomena and problems studied?
- Can we really just keep our heads down and focus on our own specific phenomena, and simply hope for the marketplace of ideas will converge to ‘better’?
- Why we are so bad at predicting weaponization – at ‘doing theory’? Is it naïvete, or some lack of imagination, or an inability to put ourselves in the position of malevolent parties, or a lack of a skill set, or is it a lack of care because there is no accountability? And, if we accept we cannot predict weaponization, why is it we also cannot build effective response systems to counter that weaponization quickly? Is it politics and bureaucracy, or sunk costs, or a fear of making things worse, or an ability to blame others, or effective lobbying and payoffs from the weaponizers?

- Is it that when theory ‘hits home’ such that it can affect the freedoms that we feel as ‘doers of theory’ that we have under the current system that we then back off? Is it inevitable that self-interests, an imperfect constraint system, the influence of powerful demand, and our own limitations of knowledge and prediction will ensure that something akin to the imperfect, volatile market for new solutions to new problems continues until something ‘really breaks’? Can we continue to have blind faith that the feedback from the environment and the crowd will, not only on average, but always, get ‘it right’ or close enough, so that something will always be there to stop the dominos from all falling even when we know, with certainty, that harms, intentional or not, will always be done by the abusers and hackers of theory?

### **Questions About the Failure of Theory in Humanity**

- Why do we still make strategic decisions based on non-theoretical, non-scientific belief systems? Why do we have such trouble predicting significant voting outcomes? Why do we not have less corrupt, more responsive systems of social governance?
- Are the failures part of the usual learning-adapting process (where informed guesses are made and then later corrected)? Or, is there something else, and how can that be measured and managed? Are the failures always eventually ‘corrected’? ...in the ‘best’ way? ...and, as quickly as possible?
- When we have the supporting data, the logical arguments and the understanding of the relevant parts of the focal phenomena (i.e., we know what we know and what we don’t know), can ‘insight’ make right? Are there ways to confront the opposing forces commercially, democratically, legally, or even militarily? Is conflict inevitable against those who resist change from a ‘non-theory’ approach? What is the most important beach-head here?
- Is there a way to confront non-theory to mitigate its harms and reduce its scope or will it always remain because it provides the security, individuality and identity that theory simply cannot? Is that what it is to be human – to know ‘when not theory’?
- Does it even matter to humans what the best structure is to model true reality when the goal is simply to gain the highest net benefits from that reality?
- Are there dangers to this ‘human level’ myopia in science, and even if so, what is the escape given the difficulties in thinking in a non-human manner (especially when our first response is to anthropomorphize any alien entity)?

- Will the justice courts be the place to set precedent and possibly lead to changes in laws and regulations when ‘predictable horrors’ are allowed to occur, or when some private entity profits from unfair advantages that may go to those who can afford the data and the analytics?
- What alternatives are there for setting incentives and directing resources for doing theory – is some central controller needed, or just a more transparent and robust marketplace?
- What is lost when non-expert policy-makers, including those with particular ideological or political agendas, are in charge of funding science (e.g., theory-building)? Or, when a charitable foundation – with its own brand-aware agenda – is affecting the funding? Or, when military defense is? Or, when academic institutions responding to pathological incentives to increase rankings are, and so on? Is there a watchman, or does there need to be one?

### ***The Structure of this Book***

This book is structured to explore the stated purpose of clarifying what theory is and how to use it. Thus, the main chapters flesh out the who, what, where, when, why and how of theory. Several chapters precede those to justify the existence of theory, and several follow to provide its delineation and its meta-level concerns. Each chapter contains meaningful subsections of explanations and expansions of interest. Still, we attempt to be direct and compact in the delivery, given our respect of your time and attention. Please enjoy.



Figure 1 – The Three Phases of Theory

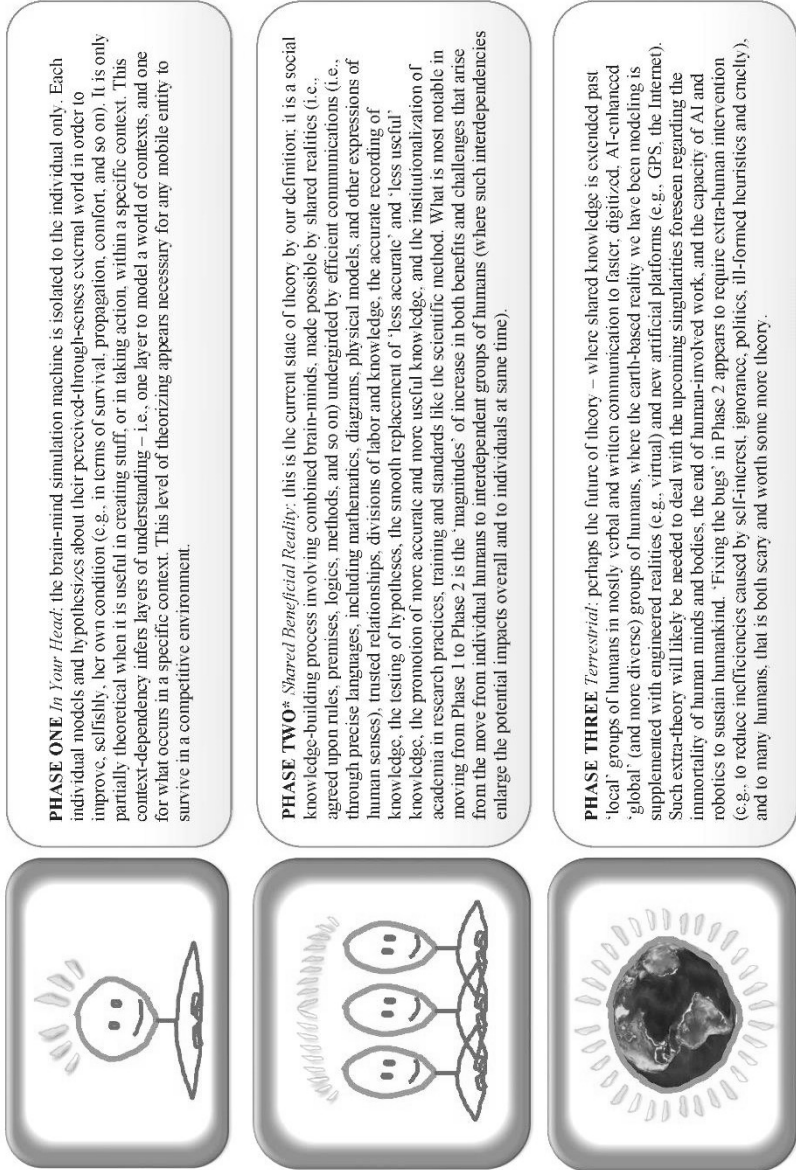
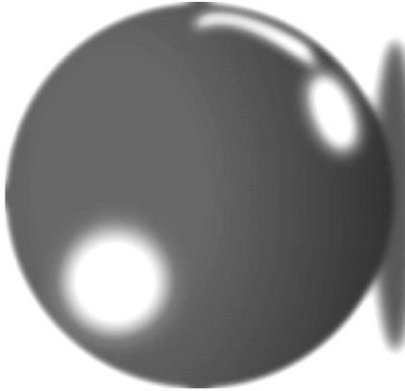


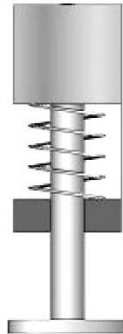
Figure 2 – The Structure of the Book



**A direction from the Analysis:**  
 Not Theory.  
 Meta-Theory & Future?  
 Wind-Up.  
*...how to assess theory, how  
 to assess that, and where to  
 go from here*



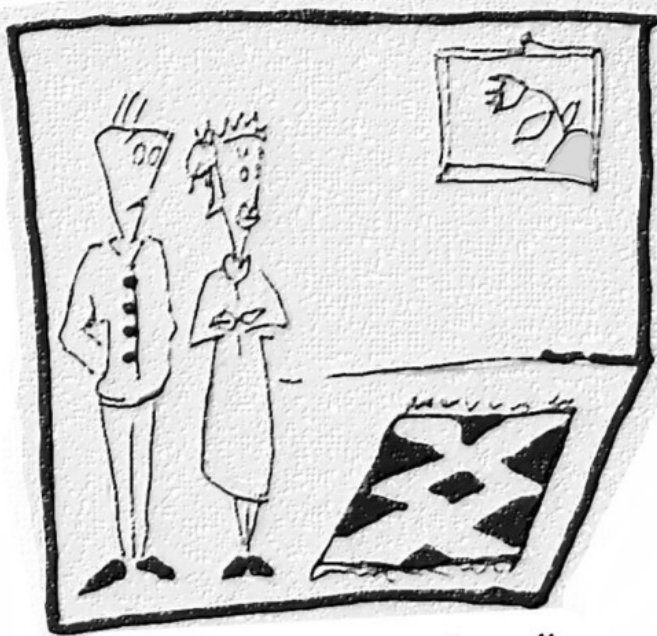
**The Analysis on Theory:**  
 Why Theory? Who Theory?  
 When Theory? Where Theory?  
 What Theory? How Theory?  
*...a full description of theory from  
 common and uncommon  
 perspectives to help users and  
 builders and critics*



**The spring for the Analysis:**  
 Why this Book?  
 Why Reality?  
 Why Knowledge?  
*...what underlies the human  
 ability to build theory and  
 why it is important*

**THREE KEY TAKE-AWAYS**

1. *What are the premises upon which you build or apply theory?*
2. *How do you transition from Phase 1 to Phase 2 theorizing in your experience?*
3. *How should your theory be used, and do you feel any responsibility for whether it is used in that way?*



***"Shame, the theory doesn't really match the rug."***

# CHAPTER ONE

## WHY REALITY?

There is no need to debate *ontology* (as the state of *what is real*) if we are considering a context outside of Phase 1 (as we are here, being focused on Phase 2 for the remainder of the book). Our definition of theory assumes a *shared reality* that allows individual brain-minds to be joined through effective communication in order to expand the pie of benefits through coordinated action. Logically, *a shared reality is an objective reality*.

Reality is objective when it is sufficiently shared (i.e., shared across humans for the purposes of this book). That sufficient level of sharing implies the ability to gain agreement from multiple, less-than-fully-dependent individual brain-mind perspectives through a voluntary process that resolves disagreements peacefully. Of course, objectivity is *not* needed if one remains inside of one's own mind alone (i.e., Phase 1), but humans have *not* evolved as isolated creatures. Many studies (including those of prisoners in solitary confinement) have found significant degradation of specific mental functions when humans are kept from contact with each other. Childhood development research even tests for *theory of the mind* in order to determine whether a child's mind can model how another person's mind would model a reality from a different perspective than her own. In other words, human brain-minds are normally built to thrive in Phase 2 and to exploit the overlaps of independent brain-minds in society<sup>2</sup>.

---

<sup>2</sup> To any *Faux Neos*, you are not *the matrix*, nor are you now in it. A world exists outside of you because no rational being would imagine interactions with other entities that act unaligned with their own wishes if they were in control of the narrative. A world exists outside of you because your human brain-mind is limited and would not waste its resources simulating this world, including simulating its own limited senses, working memory, computational power, and so on for no reason other than to while away the time perhaps imagining – cheekily – being able to do so itself or as an artificial machine's overly expensive and inefficient battery.

Note that in Phase 1, a *theory of mind* is still advantageous, but is quite limited. We don't need *objectivity* as defined above in order to account for other entities seeing or knowing things that are different than what we know if we are only going to act in pure self-interest locally (within our own observable system). Knowing what a tiger is likely thinking as you approach its freshly-killed deer is helpful immediately to self-survival, but such a skill is far less deep than that required to build a common understanding for a long-term relationship of coordinated and delegated responsibilities with another human being. Regardless, the current human state at Phase 2 likely evolved from a previous state at Phase 1, likely when communications were much more limited. Given such a path, it is likely that limitations in our thinking result not only from Phase 2 factors but also from factors involving Phase 1 and even prior, as neurobiological elements and their related developmental genetic coding have always fluctuated in variation, selection and retention rates over human evolution. (We consider limitations to Phase 2 theorizing later.)

Phase 2 significantly expands the benefits of brains-minds by allowing other humans to *do stuff with us* over time in ways that *human-to-non-human* symbiotic relationships (e.g., with internal bacteria in digestion, or with canines in hunting) cannot. Such symbiosis forms the basis of voluntary exchange of both physical and non-physical items that allows us to move beyond simply meeting immediate needs (e.g., to move up Maslow's hierarchy towards greater fulfillment). But, in order to have such symbiosis and to trade brain-mind things (e.g., ideas), we need to have a solid understanding of those peaceful potential exchanges – we need to know the players, rules, items in play, and other factors and conditions involved. This necessitates that second, if not third, parties grasp the same understandings, and that then implies *one shared reality* across brain-minds that can be applied again and again (i.e., has some permanence). It is hard to overstate the high degree of understanding that underlies the opportunities to have mutual, often co-reliant benefits, among humans who are not genetically coded to (i.e., who are not family) or who not are forced (i.e., through physical threats) to engage in such transactions given the current ubiquity of those transactions. Even that ubiquity speaks to the power of having an objective reality where brains-minds can cooperatively interact through what we call theory.

## **The Need for a Common Ground to ‘Do Better’ as Groups of Entities**

The full expanse of reality may well be complex, cloudy, mostly hidden to our senses and impossible to predict in many ways, but humans have evolved to focus on, process, and exploit that little corner of it that we can understand, predict and control. A necessary prerequisite condition for transacting with peers in a non-violent, longer-term, co-dependent manner is to share some basic understanding of our common corner of reality so that costly mistakes are avoided. When the risks and costs of potential transactions are reduced through a shared reality, more and more of the transactions are actualized through rational actions taken for expected benefits.

That basic understanding entails shared views of the *symbols of real things* in addition to the *real and present things* that are being exchanged<sup>3</sup>. That understanding is based on a communication mechanism, such as a language, culture or exemplification, that is bolstered by a resolution mechanism such as a trusted and objective third-party interpreter. (And, yes, we do note the regress in the logic – i.e., that those understandings have to have been built up already from basic [historic] elements to even provide the language and the third-parties for more advanced transactions.) So we now can express a measure of the sufficiency of a shared reality – *it is enough common knowledge among brains-minds so that voluntary exchange can (and most often does) occur*. Note that this condition includes the expectation that both intentional and unintentional deception will exist in that reality (e.g., due to differences in valuations).

Once the understandings are built up, the ‘value pies’ possible to create by combining brains-minds are substantial because many new *economic mechanisms* become available, such as the effective and efficient division and coordination of specialized labor. When groups of people (as brains-minds) can find shared understandings of goals, values, missions, measures of success, measures of inputs and outputs, coordination mechanisms, reviews, rewards, and so on, then a great deal of beneficial economic, scientific and social activity can occur. And, that can only occur when we

---

<sup>3</sup> *Concepts*, solidified and symbolized in words (of some language shared among users), constitute one real means for brains-minds to learn and to think more efficiently according to neurobiological research (e.g., Barrett, 2017). And, these are only meaningful and only arise when shared (e.g., through education and parenting) in a *common* (read objective) reality.