Communication

A mathematical theory for life

Ignacio García-Carrillo

COMMUNICATION, A MATHEMATICAL THEORY FOR LIFE
By Ignacio Garcia-Carrillo

Ed. Ignacio Garcia-Carrillo

Communication

Dedicated to Arancha, Isabel, Jacobo and Rocio, who everyday stand this crazy attempt at a writer.

This book is my legacy for you. I hope this gives you some insight into my thoughts and helps you as a head start for your lives.

Introduction

The risky business of communications

An icon of telecommunications in my home country, Spain, stood in front of me in the dark, that cold night late March 2003. Empty streets greeted the few of us entering the facility, for it was already late on a weekend. The CNSO, Spanish for National Center for Operations and Supervision, laid a world apart from the bars a bunch of twenty somethings should have been visiting, particularly one that was going to get married in a week, me.

A long and exciting off-hours deployment awaited us, the culmination of many months, if not years, of hard work. Thrill, fear, despair, joy and exhilaration may not sound like the most usual emotions during telecommunications engineering practice, but Oh boy, you bet those were felt that night. On the other side, at Hewlett-Packard, those were still the days of the HP way, the moral guidance that its founders had set for the company, and commitment to the point of emotion was not unexpected.

The journey had started a couple years before in a warm afternoon at HP headquarters on the outskirts of Madrid. A young engineer reviewing a contract, superstitiously signing with his lucky pen, won at a golf tournament with a bit of luck, and wishing that his gut choice for HP over Accenture would turn out well. Decent salary, but not fantastic, curiosity about that HP way they all mentioned at the interviews, plus some hope for international movement briefly mentioned by the impatient HR lady, were enough to incline the balance.

A year into the project, some of us were considered senior. I laugh at the concept today, but back then it made all the sense in the world. A marathon of reading, learning, documenting, developing, configuring, testing, had to be run at the pace of a one-hundred-meter dash. And already in this time, two competitive teams had developed. One the orthodox, violently intelligent, hardcore research and development organization. The other the practical, smart and elaborate organization reusing and making things work. My brains or rather lack of thereof placed me fast in the second.

Soon competition became fierce, with signs of disdain flowing freely from one camp to the other, ranging from simple nasty jokes to political backstabbing of the competition at executive level. But sometimes we won, and I was assigned to measure the traffic flow through the network.

The idea was that we would set up the big routers, the nodes of the network that transmit the bits of information from one user to the other, to generate a briefing of some of those bits, containing things like origin, destination, or type of information. My system would gather those inputs, consolidate and analyze the data to provide a high-level view of how the network was being used. It was the first insight into what mass Internet would provide

to end customers, and the validation of the new direction of the Web after the burst of the Internet bubble two years prior.

Destiny has a weird sense of humor, though, as network analytics was precisely the only project that required expertise in statistics, my least favorite subject in math, so I had to spend an extended amount of time dusting off my random signals books and notes from college. But despite these challenges, my design passed the tests with flying colors and was ready on schedule. Apparently, team A´s part of the project, the configuration of the network to send us the information, worked as well.

Review of the deployment procedure and preparation of the systems, executed with sleepy eyes kept open by coffee, has always seemed to me like a good recipe for Chernobyls, but that was the tradition, and we stuck to it faithfully as went through the manuals we had prepared for ourselves. Network was verified, new templates uploaded, systems preconfigured, and all stood prepared for execution.

And execution was what I began to fear little after we began. My side of the procedure went seamlessly as expected. Just a restart of the collecting system would get my system to begin listening for the incoming information. My fears were related to overflowing of the system, or mistreatment of the information. But the problem soon showed to be very different, we were not getting any inputs.

At first it was nothing too concerning, there must be trouble with the firewalls, those systems that keep information from flowing too freely through the network. But no, no issue there, the right ports are open. Then diagnostics of the router, is it sending the information? Is the new configuration updated? Is it sending traffic? Wait, oh, no, look at the graphics showing the router´s traffic: nothing is flowing through it! What is it doing? The Central Processing Unit, the router´s brains, are overloaded. OK, must be something temporary. We never saw anything like it in the tests at the labs, even when we simulated high volumes of traffic through it, but surely will fix itself and after all, we have another three big routers sending all Spain´s Internet data through them… or do we?

One curse followed another when the network team came running. What have you done, idiots??!! Traffic has stopped completely! Weren´t you touching only one of the routers? Look at the graphics! No Internet! All Spain!! We´re going to be in the news tomorrow. Team A and customer began a heated discussion and threw looks of hate towards me, the only representative of the "suministraidor", an unkind word game with supplier and traitor which only makes sense in Spanish. The noisy council now included the grumpy and dreaded vice-president of operations, famous for his bad manners and hitting tables with his bear size hands. We´re calling the CEO, now.

At that point I really feared I had committed a career limiting move by getting involved into this project. The perspective of being fired the week before my marriage was not particularly nice, and I could my feel my pulse accelerate as I scanned through the screens showing all the diagnostics. Even if the fault was not in any of the procedures nor elements that our team was touching or had responsibility over, I was very clear who the weak link

was, and they could always blame us for driving them into this situation. The narrative of the supplier being the enemy was well established and I was clear we would become the scapegoat.

Wait! Is that curve raising? Come, guys! I believe routers are beginning to transmit again! CPU usage has dropped in the first one, traffic is flowing! All eyes went to the big screens after my cry of triumph. Vice-president stopped on his tracks to the phone. A call to the CEO got postponed as we saw the system come back to life. And suddenly my system began to get the expected information, as a confirmation that the wheels were turning. After forty-five minutes everything was working as usual and the whole incident was a minor glitch. Congratulations and back home to sleep late.

On the street, nobody ever seemed no notice. No TV news, no newspapers, not even comments in any obscure specialized blog. I guess there was not that many people looking at the speed of their downloads at home between three and four am on a Sunday.

Of course, the aftermath was not so easy for some, as post-mortem research showed an overlook of the CPU usage in the routers during tests. In the labs this had a minor effect, but, with much more sustained traffic, this led to a stop, which in turn momentarily overflowed the remaining routers and brought Internet down in Spain for a scary fifteen or so minutes. At least we learnt from this event. I believe there has never been any incident this wide again.

Another unexpected result was also obtained when we could finally analyze the information coming from the system. Contrarily to everybody´s expectations, the pattern of traffic in the Internet in Spain those days was showing that the Web was no longer relevant, and that a few users were monopolizing the network with their heavy usage of peer to peer applications: sharing porn was bigger than the whole web surfing and email altogether.

In the end this information was critical for the customer, who would go on to cancel a system for caching web content, storing it for reuse, and would save millions of euros. Our system and our suffering paid off many times over, and we secured work for the following years.

Oh, and by the way, I did end up marrying my wife the following week and continue married after seventeen years, three children and several international moves.

What I do

The incident described in the preceding pages somehow illustrates the initial part of my career as a telecommunications engineer. Design, development, configuration, testing, deployment and support of monitoring systems for communications networks. Many of us had a fantastic experience and gathered some depth of real-life knowledge on their design, development and operation.

After some of these projects I naturally moved on, like many others, no special merit, into a combination of minor project management and high-level design roles. These allowed me some room to abandon the demanding day to day of technology consulting, develop some management and communication skills, make a bit more money and get a better company car. I could have stayed doing these for a bit longer, but fortune struck and due to the lack of sales engineers I ended covering for them, which took my career on to the next phase.

I was never a natural in sales. I still call it the dark side. My technical background and default shy personality dragged me, but somehow, I managed to use them as well to position myself as someone slightly different, who could bring value and differentiation through good enough sales capabilities paired with technical depth not common in sales. This helped in an environment of very technically intensive and savvy customers, in a culture, the Spanish, that despises salesmen and somehow admires engineers. So eventually I had a fruitful sales career for ten years, taking me from Spain to the USA, and giving me the opportunity to work throughout all western Europe, Latin and North America.

A big part of the experience was also becoming tougher through exposure to ambitious sales managers, doing no more than useless sales soothsaying and numbers massaging, putting undue pressure on the team, only in order to look good to management. Cruel customers and ruthless procurement departments insulted us to the point of making me impervious to abuse. Travel was frequent and extenuating. I got my platinum card, which was delightful for my kids when travelling back to Spain, getting access to the fancy areas with decent food in the airport, but it was painful and damaging to me and the hundreds of other executives wasting their lives inside an aluminum tube for too many hours.

Eventually I even got into management positions and became exposed to company politics, whimsical executives and flamboyant vice-presidents, point at which I began to miss my past life. Was I in the right place? I began to look back, ask myself what I was doing.

Sales was not my strength even if I did well. And to be fair, I was a decent engineer, but was never truly a deep technical guy either. My span of attention is too short, and my interests too wide, to gather the intensity necessary to develop the extreme depth of a chief technologist.

This self-realization took long, but finally I could channel my newly understood capabilities in full at the third step in my career, as a business developer, which in my company is somehow a bridge between the technical and sales world.

There are very few of us, which is understandable. Senior, but not old. Technical but understanding of sales. Sales but understanding of the challenges of products and solutions. We are sales for the product and technical teams, we are technical experts for sales. We are here to serve our customers and sales teams with better solutions, we serve the company acting as catalysts for sales and connecting products development with the customer demands. We are here to make the connections, fill the gaps. We create awareness with long term visions of where telecommunications are going in the next ten years, and the

next day we engage in deep discussion about some architectural detail on some proposal, providing the credibility for the company to operate with customers who rightfully expect the most from their providers and not so rightfully despise the non-initiated in the telecommunication jargon.

The reader may now see that my job is about communication in every sense of the word. My job is to communicate the complex and subtle advantages of my company´s technology for communications. I communicate about systems that enable communications.

Intuition may indicate that his communication should be easy among experts, but reality is that it can become extremely difficult, as suggested in my little adventure before, due to complexity, biases, personalities, environment and another dozen factors that we will see in following chapters.

Anyway, I should not complain. I love my job. A match made in heaven. It brings together the right skillset and personality, respect and visibility, paired with a respected boss and friend, and a fantastic team, with a global reach.

Now, is this enough?

Origins of this book

My wife and kids sometimes make fun of my eccentricity. It is not really about nerdiness, they all are nerds, but more about some of my electrical engineer quirks. Some may be minor, except on occasion to my exasperated wife: the typical obsession with all things space, remembering weird data from long ago and not where I left my phone, or not noticing I´m being talked at. Others can be more time consuming: questioning every aspect of life in depth, devouring non-fiction or trying to become a writer.

So I acknowledge that I may be going through an unconventional mid-life crisis. Instead of buying a sports car or getting a new wife half my age, I dedicate my time to trying to write a book that explains the impact of communication theory in the lives of people. But reviewing my life during the last ten years, it may be understandable.

I love cooking, partly because I love eating, but also for the joy of focusing on something completely different to my other daily activities. Although I am not a "haute cuisine" chef, I can get into relatively complicated recipes and I do like to research new techniques and dishes, to continue improving and add some variety to the menu at home. I cook everyday lunch and dinner for the whole family. They faithfully take their lunch box with paella to school or work, driving curiosity and sometimes envy from their peers, teachers and supervisors.

Cooking helped me stay sane and cool under pressure during the worst moments of our first trans-Atlantic move, when being fired and leaving the family stranded on the other side of the Atlantic was a real possibility every weekly forecast call.

Commented [GI2]: Complicated and boring. Does not flow well

We had made a risky bet when leaving our jobs in Spain, both reasonably remunerated, secure and stable, for a bigger salary and greater career expectations. "You are crazy", said many of our friends, while wishing us the best. And the first couple years, not unexpectedly, were rocky, starting almost from scratch. The saying "Happy wife, happy life" also unfortunately implies the opposite when your wife is unhappy, and she being without a job for the first six months was not the greatest start. School adaptation problems for our poor five-year old, extensive travel for me and no friends didn´t help either. At the office I soon found our weak sales were normal: simply our quotas were established on unrealistic expectations and over wrongly attributed past year sales, fantastic.

Whether crazy quotas were set maliciously on purpose or just bad luck, I will never know, I stopped asking. But I did realize that sales teams dragging much behind quotas did not tend to stay long at most companies, and more so in turbulent times like we had in HP. With our work permit depending on my work, we would have fifteen days to leave the country if I was fired, and I did not have the best relationship with my boss back then.

So, although I tend to be positive, I had to deal with the pressure somehow, and cooking helped somehow, but was not enough. I soon became hyperactive, all the family did. We were travelling the USA, going to Disney every weekend, exercising intensely at whatever sport we could find, and additionally I went into gardening and reading non-fiction.

The latter came as I began to wonder whether all this situation we had put ourselves into, made any sense. At first, I did my research on how to improve my day to day at work. Basic training on how to improve sales, customer relationship or manage your executives. I did take some good training at work, but soon I was misled by some superficial leaders in my team into plenty of self-help and self-improvement books. I soon found them to be mostly garbage. Self-appointed experts, too weak on methodology, too strong on empty marketing. Lights and whistles. Aggressively nice looking, short and accessible readings, full of optimism and dynamism. But empty of content, depth and method, which made them weak at the first questioning, and ultimately a torture to finish as I navigated the reading in despair, looking for real learning.

Although Spanish, and stubborn, I am no Quixote, and after half a dozen, I gave up my fight with the self-improvement business crap, and turned into deeper questions, part of which I list below:

- How relevant is this work that I am doing? Am I making an impact in this world? Where are we going with all our efforts? What is life? What is this for? What is the meaning of life? What is philosophy? How do we philosophize?
- How will we impact history, the world? What does impact mean? How is it measured? What is history?
- Are laws right? How do we govern our countries? Is democracy right? What is democracy? How is it evolving? What were the past methods of governance?

- How accurate is financial measurement? What do numbers mean? What does statistics mean? What does mathematics mean?
- Sales, orders, revenues, margins, profit, finance… Is economy a real science? Is capitalism right? What are its weaknesses? What are the latest trends in economics? What is behavioral economics?
- Is marketing right? Is journalism right? How do they communicate and why? Can we rely on them?
- How do we manage conflict? What is conflict? What is war? How do we handle war? How did the main conflicts in history happen?
- How does our mind work? What is neuroscience? Are we computers?
- How does our society work? Have we improved? How do we measure?

You may notice that many questions spawned more questions, either getting into details, or driving into another area of knowledge. Each of them led me into reading at least one book, which I list and highlight at the bibliography. And this time I looked for books from well-respected authors, some of them even textbooks for university, searching for solid methodology and scientific depth, in order to gain proper and systematic learning.

Thus it shall be noticeable to the reader that my foundational reference for this analysis is of course the work by Shannon, *"A mathematical theory of communication"*, but for wider theoretical support we shall lean on multiple sources, ranging from *"The origin of species"* by Darwin, to *"Thinking, fast and slow"* by Kahneman, and for ideological and stylistical inspiration I shall rely on work from *"I, Robot"* by Asimov, to *"1984"* by Orwell.

Also the observing reader shall realize that even if jumping to conclusions, by nature I cannot avoid always staying skeptical, about myself to begin with, so the quest for responses at the time of writing is still ongoing, and hopefully it will never end. But for the first time, I have come to a point where I need to reach some first conclusions and collect some answers. These constitute the thesis of this book.

Purpose

The basic statement of purpose of this book is that we can shed some clarity onto multiple aspects of life, like the questions described above, and find some responses, if we look at them through the lenses of Mathematical Communication Theory (MCT), complemented by several other key mathematical and natural theories, and stacked together so they can address each of the layers that constitute our world.

We shall describe how MCT underlies our lives in multiple ways, so understanding communication theory, complemented by a few others including:

> **Commented [GI4]:** Does not flow well

> **Commented [GI5]:** Need to be precise about what theories support my analysis

- Basic mathematics,
- physics and chemistry,
- evolution through natural selection,
- control systems,
- complexity theory,
- neuroscience and computational theory of the mind,
- behavioral economics

and coupled with a methodology of bottom up construction and deconstruction of reasoning, shall help us arrange our lives better by understanding the world and taking better decisions.

By taking a deep look into a number of aspects of our lives, from individual behavior to society and history, deconstructing each of them and finding out their individual constituents and relationships, we shall manage to map those components to the elements that conform the MCT, and then use the theory to help explain how and why the world communicates and behaves the way it does.

One key assumption is that communication is a key capability for a creature, the human being, whose key natural advantage and selecting evolutionary trait is the acquisition and computation of information that enables the creation and execution of plans. Understanding the way human gather and emit information should be key in understanding their behavior, and with this knowledge, derive conclusions on multiple societal phenomena.

We shall also rely on the other theories mentioned above, to help model each of the components of the communication system and their behaviours.

You may wonder why, of all the theories listed above, I chose to digress about mathematical communication theory. Firstly, it is within my area of expertise, telecommunications, and I happen to understand communication theory in some detail. Secondly, my job is related intimately to communication, and I naturally tend to see all events in the eyes of what I do. And thirdly, I have not been able to find a sufficiently comprehensive and simultaneously practical text on the matter, even though there are excellent materials that are included as reference too. All texts I have found are either focused on the engineering and mathematical aspects of the communication, or deal with other methodological, cultural, social or anthropological aspects of it. Bridging both the mathematical/engineering with the anthropological/philosophical sides of communication is thus a major interest for this text.

In this book we shall explore together the role of communication in our world, and in the process, identify ways to improve communication. We shall start at the high level questions stated above, and then get deeper into

Is it mathematically, physically and biologically possible to understand each other? What would understanding each other exactly mean?

What this book is... and what it is not

A communication theory of the world. Applied communication theory. Philosophy of information
Leave a legacy of some knowledge to my children, and if interested, to the world.
Yes Philosophy of science and engineering
Yes an attempt to develop a similar book to some of my references: Thinking fast and slow, how the mind worksh

No social science
Not about journalism nor publicity
Not sociology nor anthropology

Not a text book.
I never intended to write a textbook about the matter, I´m simply not ready for that and do not have the knowledge, the time nor the resources to take on such a task.
Trying to take a different look at many aspects of life
This I leave for my retirement, but in the meantime I want to generate a piece of content that is valuable for my kids and maybe some others that are searching some guidance on communication

Not about self help or how to communicate better, although you may get some ideas or pointers to research further

Commented [GI6]: For this my book can be crushed

Commented [GI7]: Be precise on why it is different.

Commented [GI8]: Avoid making fun of self help books

Agenda

Two parts

One explaining the basis for our discussion, which is math applied to life: engineering, and in my case, mostly communication theory

Second applies this knowledge to multiple aspects of life, trying to enlighten each of them with our just acquired mathematical background

Communication

Definitions

Definition of communication for the context of this book

What communication means at each of these levels or about the role of these in the process of communication
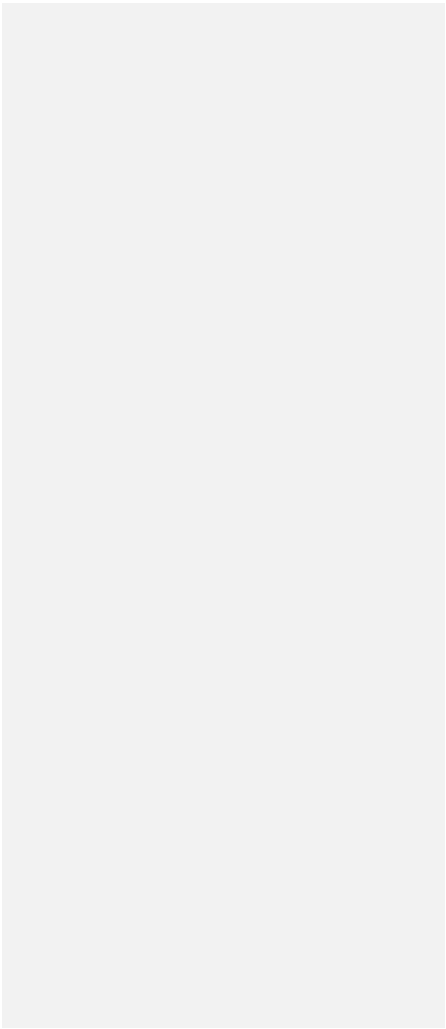
The world is a communication system made up of multiple communication systems that work at different levels

Through this chapter we´ll also introduce other theories that shape my thinking:

- Evolution
- Neuroscience
- Computational theory
- Computational theory of the mind
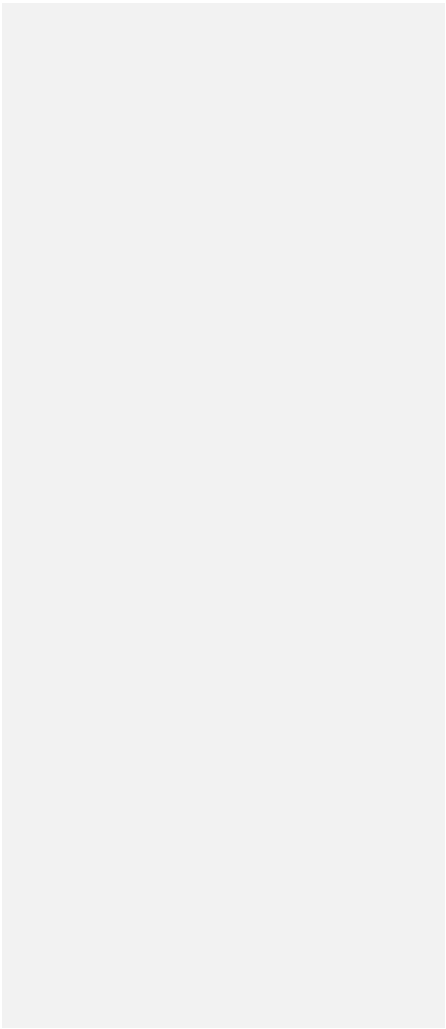- Control systems

Mathematics

Communication theory

Physics and Chemistry

Idea meter: El infinito en la naturaleza es "cualquier cosa".

Biology

Medicine and Neuroscience

Computational theory of the mind

Brain produces the mind, which is a mathematical entity, self conscient as it has a virtual model of itself, with multiple feedback mechanisms that might work to amplify quantum effects.

Thinking allows your mind to grasp the information deeper

The social sciences

The bias and unmathematical shit left in much of social sciences. Need to build a layered approach to them, based on the math and exact science, particularly neuroscience, evolution and mathematics

The domain of ideas to communicate is simply too big to grasp. Thus understanding and managing ideas, the source of communication, can only be kind of achieved with evolutionary patterns. Now, we can always get dangerous dogs in the process…

Complexity: How do we handle complexity? How do we handle the complexity of society? How do the social sciences handle? Badly, encourage for a new approach that is much more systematic, scientific method related. Able to produce thesis linked to other sciences like math, neurobiology.

My idea for dealing with complexity, evolutionary approach: Self preservation is the key. Natural selection is the mechanism. Having backup is fundamental. Try and fail/win is fundamental. Now, humans can improve natural selection by using their advanced brain functions, playing with the math, improving our chances at the game of poker that is natural selection.

History

Letter to the future: Pandemics, climate change. Explaining how everything cruised fine and it was not so clear what in hindsight will seem obvious.

23

Miscommunication

Problems with the source

Problems with the channel

Problems with the destination

Overcommunication

The drama queen century
Social networks and bulshit

27

Complexity

Separating ideas systematically and establishing a hierarchy to bring them together is better than mixing
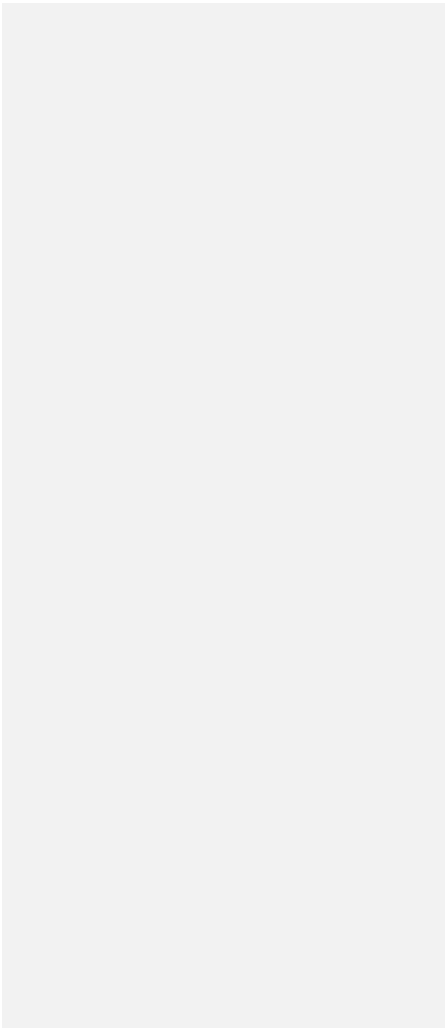
Bias

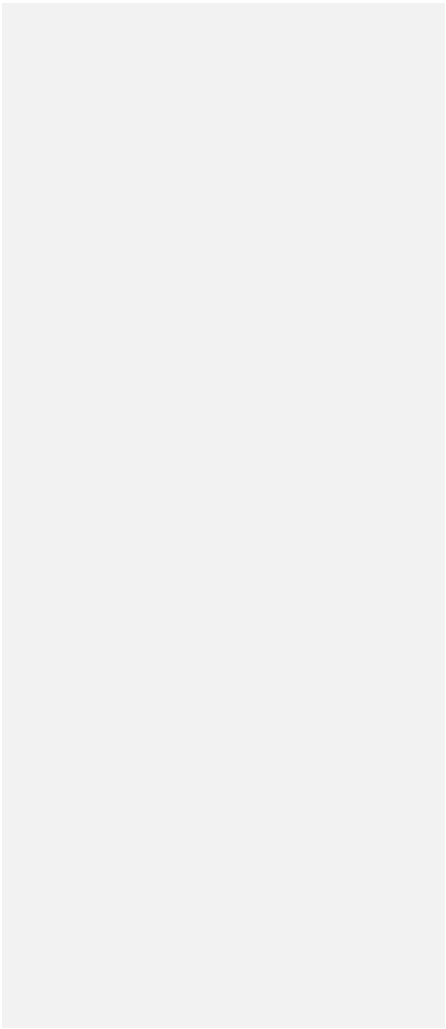Describe concept of bias and how it affects communication.
Propose a new bias, victimism.

Taxonomy
Communication systems

Media

Communication in our lives

Describes a methodology of analysis of each domain of our lives in the light of the knowledge of the role of communications (and other theories) in each of them

If something is too big and complex you just split it in pieces and begin looking at each of them, and when understood, you come back to take a wider look

Map components of a domain to the components of a communication system and explain some of their behaviors on the basis of communication theory elements, computational theory of the mind, evolution, etc.

You stack things to build more complex concepts. Each thing must be exceptionally solid, and everything is subject to doubt, skepticism, reexamination and experimentation

Commented [GI9]: Need to be precise on which theories I am basing my analysis on

The individual: knowing ourselves

What are we? The individual as key part of the communication systems. We are source and destination.

What is our purpose in life? Talk about our role and destiny in the cosmic scale of things. Extend life. Extend the miracle. It´s a choice.

Individuals as a system of multiple layers and communications sytems

Moral principles are moral choices and I choose mine as an anchor. Deep inside my brain.

How can better understanding of our part within the communication systems, our bias for example, help us fulfill our purpose?

Society: Communicating with others

Society as a communication system

What is society? An ecosystem of individuals. Also a communication system.

What is the purpose of society towards the individual? What is the purpose of the individual towards society? What is the purpose of society as a whole?

Bottom up approach. Individual – Society – Civilization – Humanity…

The limits of experts

Complexity of their domains of expertise. Normally they are aware, but people are not

Specialization: Loss of context

Bias towards their domain of interest (could be my case too…)

Communication towards society

Media

Motivation of the media. Their role

Fake news

Is it possible, and worth it, to combat fake news on the internet?

Balance between fighting idiocy and spreading it

Humour

Political correctness, wokeness and other shit

Economy

What is the economy today?

The economy has turned into information exchange, mostly.

Executives

The number massaging elite. How managing information gives executives power

Who owns you?

The fallacy of capitalism vs socialist

It´s just another big organization owning you (oligopoly), the only difference is control and feedback. Market vs revolutions

The fantasy of markets vs the utopia of economic planning

America the communist

Too big to fail: oligopoly of huge companies owning everything, no competition. How can small companies compete?

Equality

Against equality

Politics

Democracy vs others

What is democracy from a communications perspective?

Do we really have a democracy?

The limits of democracy

Not everyone can decide everything. There is a lot of legislation already? Is there anyone cleaning the weeds? Constant reform is needed, but how much? Politicians have no incentive to reduce politics and the state!

Individualism vs collectivism

Against collectivism

Against equality. We´re different and that´s good.

Demagogy

Should we use these weapons against demagogues?

Populism

What does normalizing a radical mean? Aren´t all ideas acceptable?

Is the good populist possible? The end does not justify the means!! But on the other side it´s good to use techniques to strengthen communication. Where is the limit?

How does populism break communication?

It means stopping thinking. Someone else does it for you. Then, due to the way the brain works, your ideas are superficial and have no roots. They can be overcome, manipulated or substituted easily. Or bad ideas added on top.

Forcing yourself to think creates deep, solid principles. They can change, but based on science (proof and error!)

Nationalism

Politicians have no incentive to consolidate and simplify, but they have them to separate and complicate!

The decline of democracy?

Low quality of our politicians. Paid for tweeting? Against the waste of time on social networks, overcommunicating!!

Politicians have no incentive to reduce politics and the state!

Religion

Why do we have these?

Because of the way the brain works
Understandable how it came to be. Domestication of humans

Is there a place for God?

Compatible with science? Is thinking of the infinite just another way of saying God?

Probably there is some sort of false dilemma. If redefined, there is not so much confrontation.

Fundamental difference is the scientific method. Can religion be compatible with it?

Individual plan

Principles!!

Rules cannot make up for principles. Moral principles for a sustainable and solid life. Now, take them a bit lightly

The end does not justify the means

Self-restraint

Sportsmanship

Humour

Attention to detail and implementation! Devil is in the details, and how you act communicates more than your words

Avoid hypocrisy as much as possible, you will fail as it is impossible to be 100% consistent, but you cannot give up

Do not sign up for your revolution. We´ve been given individuality in order to contribute!!

Make the best out of your resources. Strive for the best

Be merciful. Do not judge

Do not do to others what you would not want done to yourself

Work within the system

Appreciate what you have. The universe is a miracle and could be way worse than it is

Know yourself

Missing good manners or relaxedness for lack of strength. Need to balance communication strength with sustainability, style

Library for a modern mind

Recommended books to build proper knowledge

Master in life

I wish I had had this training:

Debes ser Master para entrar.

Club de la comedia con Diego. No tomarte en serio. Simpatía. Presentaciones. Excelencia y preparación y conocer a tu gente

Curso multi country con Peter Trix. Country sensitivity. Preparación

Curso alta cocina. Excelencia

Curso wine tasting. Foco. Valorar. Medir.

Curso supervivencia naturaleza. Resilience.

ONG en país chungo. Ver lo que hay

ONG zona chunga país rico. Atender vagabundos, ancianos o algo así

ONG naturaleza. Plantar arboles, limpiar algo...

Curso profesor. Experiencia con niños o adolescentes

Ong ayuda mujeres. Diversity.

Club lectura conmigo. Lectura libros fundamentales. Hacer lista. da estructura

Curso Project management pero alternativo

Algo de filosofía

Internship o colaboración en una ONG:

Alguna tarea de bajo nivel. Hacer de camarero, limpiador, secretaria o algo así

Alguna cosa muy loca? Estilo que te tiren en la calle sin nada, entrenamiento militar o algo así? Buscar

Se hace en el tiempo que quieras. Se paga cada cosa. Están los títulos de cada cosa. La experiencia y el titulo final. Es muy difícil y caro. Conseguir que algunos lo hagan de muy alto nivel.

Societal plan

Asimov´s laws for humans?

Asimov´s laws applied to humans!! Including zeroth law

Fight miscommunication

Attack each of the issues in miscommunication: Source, channel, destination, bias

How to react to your bias: How to be less wrong

Individuality vs the mass: Use your gifts!

Self-criticism

Skepticism

Travel! See the world

Read!

Think out of your box! Find another point of view. A wider perspective

Each of these has a reason inside the context of communication and the way your brain works!

Reform democracy

Continuous fight! Continuous reform.

Tools for simplification and clean up

Tools for evolution

Oscillate around the optimum

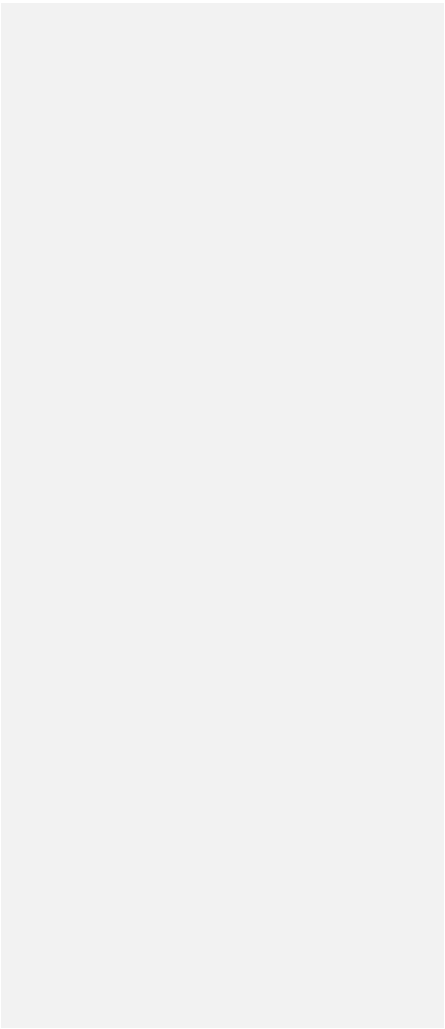The alternative is way worse!

The + manifesto

Table of illustrations

Bibliography

Bibliografía y otros materiales que han servido de inspiración para este libro.

Aquellos materiales que considero fundamentales y recomiendo muy encarecidamente están señalados en negrita.

Academy, B. (2009, July 22). *British Academy*. Retrieved from British Academy: http://www.britac.ac.uk/events/archive/forum-economy.cfm

Acemoglu, D., & Robinson, J. (2013). *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. Crown Business.

Advocates for Self Government. (2014). *The World's Smallest Political Quiz*. Obtenido de The Advocates: http://www.theadvocates.org/quiz/quiz.php#

Allen, W. (Director). (1971). *Bananas* [Motion Picture].

Almodóvar, P. (Dirección). (1988). *Mujeres al borde de un ataque de nervios* [Película].

Appiah, K. A. (2003). *Thinking it through, an introduction to contemporary philosophy*. New York: Oxford University Press.

Ariely, D. D. (2010). *Predictably Irrational*. Harper Perennial.

Aristóteles. (2013). *Aristotle's Collection [29 Books]*. Publishthis.

Asimov, I. (1950). *I, robot*. New York: Gnome press.

Bank, E. C. (2015). Obtenido de https://www.ecb.europa.eu/stats/exchange/eurofxref/html/eurofxref-graph-usd.en.html

Besson, L. (Director). (2014). *Lucy* [Motion Picture].

Boys, P. S. (26 de Feb de 2009). *Pet Shop Boys - What have I done to deserve this?* Obtenido de YouTube: http://youtu.be/Wn9E5i7l-Eg

Bradbury, R. (1953). *Fahrenheit 451*.

Bradley, J. (2000). *Flags of our fathers*. New York: Bantam Books.

Busch, H. (1962). *Así fue la guerra submarina*. Barcelona: Editorial Juventud.

Bush, G. W. (2012, June 22). *Bush Says C Grade Students Can Be President*. Retrieved from Youtube: http://youtu.be/ARUz21X1JDk

Calomiris, C. W. (1999). *CATO*. Obtenido de http://object.cato.org/sites/cato.org/files/serials/files/cato-journal/1999/1/cj18n3-14.pdf

Carl Sagan, J. H. (1980). Cosmos, the TV Series. *Cosmos*. Cosmos Studios.

Cash4humor. (n.d.). *Embarrasing and deadly sex accidents*. Retrieved from Cash4humor: http://www.cash4humor.com/gallery/embarassing-and-deadly-sex-accidents/1720-10-0

Cipolla, C. M. (1987). *The basic laws of human stupidity*.

Cleese, J. (2008, 09 10). *The brain as explained by John Cleese*. Retrieved from YouTube: http://youtu.be/FQjgsQ5G8ug

Cleese, J. (2012, 4 14). *John Cleese Explaining Stupidity*. Retrieved from YouTube: http://youtu.be/7G_zSos8w_I

Constitución Española de 1978. (29 de Diciembre de 1978). Obtenido de BOE: http://www.boe.es/buscar/act.php?id=BOE-A-1978-31229

Darwin Awards. (2014). *Darwin Awards*. Retrieved from The Darwin Awards: In search of Smart: http://www.darwinawards.com/

Darwin, C. (2008 (1859)). *The origin of species*. Bantam.

David Dunning, K. J. (2003). Why People Fail to Recognize Their own incompetence. *Current Directions in Psychological Science*, 83-87.

Davies, N. (2008). *Europe at War 1939-1945: No Simple Victory*. Unabridged edition.

Dawkins, R. (1990). *The selfish gene*. Oxford University Press.

Dawkins, R. (2015, April 9). *Richard Dawkins exploding at bullshit in the Bible*. Retrieved from YouTube: https://youtu.be/FTXN5nOstRs

Dvorsky, G. (26 de February de 2014). *io9*. Obtenido de http://io9.com/how-to-comprehend-incomprehensibly-large-numbers-1531604757

Ellenberg, J. (2014). *How not to be wrong: The power of mathematical thinking*. Penguin Press HC.

Engels, K. M. (1848). *The communist manifesto*. Global Grey.

Española, R. A. (2014). Obtenido de http://lema.rae.es/drae/?val=complejo

EU Profiler. (2009). *EU Profiler*. Retrieved from EU Profiler: http://www.euprofiler.eu/

Ferguson, N. (10 de August de 2013). Obtenido de http://www.niallferguson.com/journalism/miscellany/krugtron-the-invincible-part-1

Finley, M. (2000). *Ancient History: Evidence and Models*. PIMLICO.

Gila. (30 de Aug de 2006). *Gila - Guerra*. Obtenido de YouTube: http://youtu.be/SiHSxi2eiNc

Goldacre, B. (2007, Aug 24). Out of the blue and in the pink. *The Guardian*, p. http://www.theguardian.com/science/2007/aug/25/genderissues.

Greene, B. (2005). *The Fabric of the Cosmos: Space, Time, and the Texture of Reality*. Vintage.

Greene, B. (2010). *The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory*. Norton.

Gregory, L. (2007). *Stupid History: Tales of Stupidity, Strangeness, and Mythconceptions Throughout the Ages*. Andrews McMeel Publishing.

Hanna-Barbera. (1969). Scooby Doo.

Hawking, S. (1998). *A brief history of time*. Bantam.

Hawking, S. (2002). *El universo en una cáscara de nuez*. Planeta.

Henson, J. (2009). *YouTube*. Obtenido de YouTube: http://youtu.be/HoigfeZmbss

Henson, J. (s.f.). *YouTube*. Obtenido de YouTube: http://youtu.be/AcmpcXqNKN8

Hilbert, M. (2012). Toward a Synthesis of Cognitive Biases: How Noisy Information Processing Can Bias Human Decision Making. *Psychological Bulletin*, 211-237.

Homero. (1994). *La Iliada*. Madrid: M.E. Editores S.L.

Hooker, R. (1977). *MASH*. Barcelona: Ediciones Grijalbo.

Huxley, A. (1932). *Un mundo feliz*.

Johnny Knoxville, S. J. (2000). Jackass. MTV.

Jordi Ouoidbach, D. T. (January 4th 2013). The End of History Illusion. *Science*, 96-98.

Jordi Quoidbach, D. T. (2013). The end of history illusion. *Science*, 96-98.

Juan, S. (2006, Oct 6). *What are the scientific reasons for having sex?* Retrieved from The register: http://www.theregister.co.uk/2006/10/06/the_odd_body_sex_and_science/

Kahneman, D. (2013). *Thinking, fast and slow*. Farrar, Straus and Giroux.

Kershaw, I. (2010). *Hitler: A biography*. W. W. Norton & Company.

Lázaro, E. M. (Dirección). (2014). *Ocho apellidos vascos* [Película].

Leckie, R. (2010). *Helmet for my pillow*. New York: Bantam Books.

Lennon-McCartney (1968). Revolution [Recorded by T. Beatles]. London, UK.

Lennon–McCartney (1968). Revolution [Recorded by T. Beatles]. London, England, UK.

Lewis, R. (2014, June 1). *How different cultures understand time*. Retrieved from Business Insider: How different cultures understand time

Marx, G. (2015, Sep 18). *Wikiquote.org*. Retrieved from Wikiquote: https://en.wikiquote.org/wiki/Groucho_Marx

McCartney, J. L.-P. (1968). Revolution [Recorded by T. Beatles]. London, UK.

Mincer, J. A. (1969). *Economic Forecasts and Expectations: Analysis of Forecasting Behavior and Performance*. NBER.

Mlodinow, L. (2009). *The Drunkard's Walk: How Randomness Rules Our Lives*. Vintage.

Morris, D. (1969). *El mono desnudo*. Círculo de lectores.

Naím, M. (28 de March de 2015). La fraudulenta superioridad de los economistas. *El País*, pág. http://internacional.elpais.com/internacional/2015/03/28/actualidad/1427562693_607910.html.

National Democratic Institute for International Affairs. (2016, Jan). Retrieved from www.ndi.org: https://www.ndi.org/files/1930_polpart_manuals_010105.pdf

Neff, J. (2006, 08 08). *New Book Reports 37% of All Advertising Is Wasted.* Retrieved from Adage.com: http://adage.com/article/news/book-reports-37-advertising-wasted/110937/

Nigel Pain, C. L.-T. (2014, March 2014). *OECD Forecasts During and After the Financial Crisis.* Retrieved from OECDiLibrary: http://dx.doi.org/10.1787/5jz73l1qw1s1-en

O'Brien, G. (2007, Fall). *Understanding Ourselves: Gender Differences in the Brain.* Retrieved from The Columbia Consultancy: http://www.columbiaconsult.com/pubs/v52_fall07.html

Orwell, G. (1945). *Animal Farm.*

Orwell, G. (1949). *1984.* Harvill Secker.

Peck, T., & Boutelier, N. (2015). *Isidewith.com.* Retrieved from www.isidewith.com: https://www.isidewith.com/political-quiz

Penrose, R. (1989). *The emperor's new mind.* New York: Oxford University Press.

Pharrell, J. (2014, May 20). *Pharrell Williams - HAPPY (From TEHRAN) .* Retrieved from YouTube: http://youtu.be/tg5qdIxVcz8

Piketty, T. (2014). *Capital in the Twenty-First Century .* Belknap.

Rational wiki Logical fallacies. (2014). *Logical fallacies.* Retrieved from Rational wiki: http://rationalwiki.org/wiki/Logical_fallacy

RationalWiki. (2014). *List of cognitive biases.* Retrieved from RationalWiki: http://rationalwiki.org/wiki/List_of_cognitive_biases

Research, G. C. (2014). *http://gothamcityresearch.com/.* Obtenido de http://gothamcityresearch.com/: http://gothamcityresearch.com/2014/07/01/lets-gowex-la-charada-pescanova-a-pescanovan-charade/

Reuters. (9 de April de 2005). *5 quotes from Prince Charles' love life.* Obtenido de ExpressIndia: http://expressindia.indianexpress.com/news/fullstory.php?newsid=44686

Rodenberry, G. (1966). Star Trek.

Rubel, M. (2004). *Stalin.* Madrid: ABC.

Saenz, R. G. (2005). *Crítica del prejuicio.* Naucalpan, Mexico: Esfinge.

Sagan, C. (1980). *Cosmos.* Ballantine.

Saviano, R. (2006). *Gomorra.* Círculo de Lectores.

Scott, R. (Director). (1982). *Blade Runner* [Motion Picture].

Shannon, C. E. (1948). A mathematical theory of communication. *The Bell System technical journal,* 379-423.

Sharpe, T. (2002). *Wilt.* London: Arrow Books.

Sheff, D. (2013). *Clean.* New York: Houghton Mifflin Harcourt.

Smith, A. (1776). *The wealth of nations.* GlobalGrey.

Smith, G. (2014). *Standard deviations. Flawed assumptions, tortured data and other ways to lie with statistics.* New York: The overlook press.

Sokal&Brikmont. (1999). *Fashionable Nonsense: Postmodern Intellectuals' Abuse of Science.* Picador.

Solms, M., & Turnbull, O. (2003). *The Brain and the Inner World: An Introduction to the Neuroscience of the Subjective Experience.* Other Press.

Springsteen, B. (2011, March 10). *Born in the USA.* Retrieved from YouTube: http://youtu.be/EPhWR4d3FJQ

Stadiums, W. (2014). Obtenido de http://www.worldstadiums.com/

StayWithJas. (2013, 4 25). *Top Fails Compilation (Stupid,Funny n Painful)* . Retrieved from YouTube: http://youtu.be/F-7wOb65toU

Taleb, N. N. (2008). *El cisne negro: el impacto de lo altamente improbable.* Ediciones Paidós Ibérica.

Temlett, R. (2 de 2 de 2014). *Best of Wingsuit Proximity Flying 2013* . Obtenido de YouTube: http://youtu.be/rnvvsjstveM

Thatcher, M. (2002). *Statecraft: Strategies for a Changing World.* London: Harper.

Transcript of the USA Constitution. (n.d.). Retrieved from Archives of the USA Government: http://www.archives.gov/exhibits/charters/constitution_transcript.html

United Nations. (2015, Dec 12). *United Nations Office for Disarmament Affairs (UNODA).* Retrieved from United Nations: http://www.un.org/disarmament/

Veritasium. (2014, July 16). *What is not random?* Retrieved from YouTube: http://youtu.be/sMb00lz-IfE

VSauce. (2014, July 17). *What is random?* Retrieved from YouTube: http://youtu.be/9rIy0xY99a0

Wachowski, L. h. (Dirección). (1999). *The Matrix* [Película].

Waters, R. (1979). The wall [Recorded by P. Floyd]. London, UK.

Wheelan, C. (2002). *Naked economics, undressing the dismal science.* Norton.

Wheelan, C. (2010). *Naked Economics: Undressing the Dismal Science.* Norton.

Wikipedia. (2015, September 18). *Wikipedia.* Retrieved from www.wikipedia.org: https://en.wikipedia.org/wiki/Free_will

Wikipedia Complejidad. (2014). Obtenido de Wikipedia: http://es.wikipedia.org/wiki/Complejidad

Wikipedia Credit Crunch. (2009). *Wikipedia Credit Crunch.* Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Credit_crunch

Wikipedia Credit Crunch Historical. (2009). Obtenido de Wikipedia: http://en.wikipedia.org/wiki/Credit_crunch#Historical_perspective

Wikipedia Economics Criticism. (2014). Obtenido de Wikipedia: http://en.wikipedia.org/wiki/Economics#Criticisms

Wikipedia Falacia. (2014). *Wikipedia Falacia.* Obtenido de Wikipedia: http://es.wikipedia.org/wiki/Falacia

Wikipedia Free will. (2014). Obtenido de http://en.wikipedia.org/wiki/Free_will

Wikipedia Tiempo. (2014). Retrieved from Wikipedia: http://es.wikipedia.org/wiki/Tiempo

Wikipedia Vuelo 370. (2014). Obtenido de Wikipedia: http://es.wikipedia.org/wiki/Vuelo_370_de_Malaysia_Airlines

Wilson, E. O. (2014). *The Meaning of Human Existence.* Liveright.

Zeldin, T. (2015). *The hidden pleasures of life.* London: MacLehose Press.

Zemeckis, R. (Director). (1994). *Forrest Gump* [Motion Picture].