A collection of wogian thoughts

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Chapter 1

Introduction

During the last few years, I was often forced to postpone interesting reflections on a large varatiety of topics. Most of the time, I would think a little bit about these subjects, but I would end up frustrated by a lack of depth. Indeed, many topics of reflection require asumptions and previous work. Theses various questions and mysteries form a graph of interconnected topics, which can mean that access to some of the "high level" questions can require quite a lot of answers. Of course, we traditionnaly approach quesstions (and situations even) from the paradigm of our basic stance on reality. It is, I would say, a mix of instinct, cultural standards of varying degrees of universality, and a pinch of personnal variation. That is sufficient for many subjects such as "when are we eating ?" and "I wonder how cars work ?" but for more abstract, complexe, or simply uncomon subjects I often found that when I wanted to dig deep into the meat of things I was unadequately prepared. In fact, even for questions such as the ones quoted above, I would wager that a better foundation of the paradigm used when thinking of an answer can be beneficial.

I have now managed to set some time aside to remedy to that lack of intellectual foundation. Sadly, my time isn't infinit, and must still limit myself to arbitrary modelisations when it comes to the fundamental. My goal is to reach a better global state of understanding regarding what I consider important and the way I approach life and things in general. Hence, any hypothetical survey of all human thoughts on the topic of the nature of truth will have to wait. Some time was spent on the likes of that question, but I then had to move on. My goals are multiple and can, in broad lines, but summarised as follows :

- Provide intellectual foundation to my understanding of my own intellectual paradigm
- Partially rework said paradigm as needed
- Rethink many of my protocols and ways to approach things
- Observe how I tend to react to things, especially when it comes to my flaws
- Gain a broader understanding of the way important things work
- Give special attention that what others are and how to interact with them
- Rethink my lifeplan

- Spend some time on a few secondary subjects
- Develop intellectual tools, especially vocabulary

That is already a long list, and I do not have that much time. Less than a year in total. **Working Note:** Go back to commenting on that once the work is done

I have now a comment to myself as a futur reader. Others readers can feel free to read it, but they should know there are not the target audience. Said comment is confined to the next paragraph.

Hey handsome, I love you. I used some prepa like maths to express ideas in some parts. At the time of writing, mostly the fundamental ones (I mean, the existing ones). Provided that you remember your training, you should understand. But I also used it to make nodes and calls to a certain way to think things, from which you might have distanced yourself, especially where it comes to modelisation. You hopefully know what I am talking (well writing (well typing)) about. I will let you handle those differences with your fancy future thinking, that was just a reminder. By the way, if you are wearing a hat now and it suit you : good for you, I never found one that was good to me. Doff it for a second will you, as a gesture to me. If you did : appreciated. If not : that's fine too. Have a fantastic unit of time of your choosing (you can pick the empty one).

To some readers, I regret to say that some non-standard knowledge might be required to read parts of this work. Mostly, I will sometimes and without warning use some vocabulary and concepts derived from mathematics, and maybe a little bit from physics. This will range from simply wording things in ways that are intuitive to the mathematician to actually using mathematical concepts and consstructions. Overall, anyone without a mathematical background similar to that of a *good* second year math student should be able to breeze through.

As for the others, I bellieve most of the work can still be read without knowledge of mathematics. This might however require the ability to think abstractly around areas of lacking knowledge and to spot when it is an appropriate time to do so. I regret to inform the reader that he might have to *think*.

Those who do not wish to undertake the aforementioned effort might choose to confine themselves to a different kind of reading. Of course, that is far from the only acceptable reason to skip reading what I wrote here. No blame from me, I promise (unless you are a special case for which blame is warranted, naturally).

Chapter 2

Vocabulary

This chapter has no particular requirements

This chapter is not intended for linear reading and should be considered as a reference and quick access to vocabulary produced in the rest of the document.

2.1 Foreword

This chapter takes care of the vocabulary considered by the present document. Some vocabulary will be introduced and other will be specified or simply accept as is for my personnal use. All of such vocabulary will be given an entry in section 2.2. Said entry will attempt to describe the recommended use of the word in a few words, which do not count as my definition of the word, and pinpoint where the word is discussed in the document.

Section is a string of subsection in no particular order that contain the consideration given to points of vocabulary that have not been discusssed in another section.

2.2 Wogian glossary

kirkin (kire-keen) *Noun* • A base element in the theory of meaning. • **see** 3

Wog (Vog) *Noun* • A designation for the present document. By extension, what is introduced in this document can be called "Wogian" (Vog-ian).

2.3 Word consideration

2.3.1 ”moraly” as used by JC Fauveau

Swap with ”as a draft”. Idea that we produced an inelegant draft of our thoughts which allows some mistakes to help understand.

2.4 words TODO

- Arrogance
- exist
- people
- rigor
- semantic
- good/wrong
- culture
- memetic
- sentient
- ”moraly” as used by fovo

Chapter 3

Truth

This chapter admits the following requirements :

- A general notion of the use of set theory based notations, including the use of functions and cartesian products.
- The notion of poset (partialy ordered set), a quick google search shoudl suffice.
- The notion of lattice, skimming the wikipedia page should be enough, provided that you understand what you read.

Baring the aforementionned knowledge, a partial reading of this chapter should still be somewhat possible.

This chapter is not intended to be read easily without pauses. Frequent thinking about what is said is expected of the reader.

3.1 Foreword

3.1.1 Context and aims

The present chapter features a description of a model of truth. The goal is not to produce a completely satisfying model. Rather, this is a proposition of semi-mathematic model of truth based on a correspondence approach. However, that model has to go deeper than simply the concept of truth. It is a model of "meaning", the objects of which are correspondents to ideas. Some of these objects are statements, which can be true or false.

An important feature of the model is the ability to express the idea that ideas can be more or less well defined and statement can be more or less true. This will be represented through the use of a lattice.

Because of the limitations inherent to the topic of meaning itself, most of the following "definitions" do not show proper constructivist rigor. I describe a model by giving caracteristics for elements and general ideas on how these elements are supposed to interact within the model. The following redaction is therefore meant

to help the reader understand the model as a whole but does not profess to be a good mental construction of it.

I will use notations that correspond to usual set theory. I am used to the ZFC set theory but, as I wrote above, this work is not rigorously constructivist. I am not describing a ZFC object describing my theory of truth. Rather, I am describing a model in intuitive terms. Hence, I am not trying to adhere to the limitations and guarantees of ZFC. In perticular, my use of set theoristic notions does not presuppose the axiom of foundation.

3.1.2 General idea

The model I will now intend to describe is based on a duality between two disctinct "entities". The "basis" describes the univers, whatever can be said to be real and primordial. No structural description is attempted and indeed the basis could be excluded from the model from a mathematical standpoint. However, stating its place in the model ought to give us confort in our right to produce affirmations pertaining to "reality". The set of all kirkins is the second element of our model. In a way, it could be described as the world of "ideas". The word "kirkin" is introduced for this theory, it is the unitary concept of the model. The closest english word I can think of would be "concept", but as will shortly become apparent, this is an imperfect translation.

The basis and the set of kirkins are considered as fixed and "reliable" entities. This does not mean that they both "exist" in the same fashion, but merely that we consider them as nameable and stable.

Some kirkins can have meaning, but not all. Some of those can be true. We evaluate truth and meaningfullnes through two functions that evaluate the degree of truth and meaningfullness of the kirkin by use of a lattice. We use a poset because not all pairs of degree of meaning/truth are comparable. The lattice structure will be usefull for the descriptions of models and abstract systems of ideas.

Overall, the model follows the following ideas :

1. The kirkins are very divers and represent a lot of different kinds of concepts/ideas. They can be combined in different fashions.

2. Certains kirkins are evaluated to give a degree of truth/meaning.

3. kirkinplexes, which are a representation of the idea of "logical system" can be linked to the basis as models of it, or can describe separate things.

4. The main way to get an evaluable kirkin is to take a normal kirkin and bind it to a kirkinplex.

Point 1 is a given considering that I want to offer some degree of strucutre. Point 2 is the solution found to the need to express partial truth and meaning, which is important to a large portion of human thoughts. Point 3 and 4 corresponds to the idea that we often create "semantic contexts" for our ideas, outside of which they would lose all meaning. Point 3 in perticular underlines the notion of models.

3.2 A model of truth

3.2.1 First presentation of objects

We define a number of objects.

Definition 1 (The basis)**.** ***The basis*** *is the object that represents (or indeed, "is") reality. No matter what can be said to exist outside of concepts/ideas, this is it.*

Definition 2 (kirkin)**.** *A* ***kirkin*** *is a base object, intuitively it is close to the notion of "concept" or "idea". The set of all kirkins is noted* Ω*.*

In much of what follows in this section, we will introduce various subsets of Ω, around which we will build our description of truth and meaning.

Definition 3 (evaluable kirkins)**.** ***The set of evaluable kirkins*** *is a subset of the set of kirkins. It is noted* $\dot{E}$*. It is defined now only to serve in the definitions of functions* $\tilde{T}$ *and* $\tilde{M}$ *(see definitions 6 and 7).*

Definition 4 (statements)**.** ***The set of statements*** *is a subset of the set of kirkins. It is noted* $\dot{S}$*. This is the set that contains "affirmations".*

As we will soon see, elements of $\dot{E} \cap \dot{S}$ are the only elements for which the concept of "true" is applicable.

To mesure degrees of truth and meaningfullness, we introduce a lattice.

Definition 5. $(\dot{L}, <)$ *is an infinite bounded lattice (in the sens of posets). Its two extremal elements are noted* $\bot$ *and* $\top$*, as is usual. Additionally, we require the existence of an infinite strictly increassing serie of elements between any pair of comparable elements of* $\dot{L}$*. The minmax and maxmin operators are respectively noted* $\wedge$ *and* $\vee$*.*

It might be worthwhile to define $\dot{L}$ more precisely in terms of usual mathematical objects. I have however to this point found no specification that seemed a fundamentaly better fit than any other. Hence, I leave the choice open for now.

We can now define the two functions that effectively define truth and meaningfullness.

Definition 6. $\tilde{M}$ *is a function from* $\dot{E}$ *to* $\dot{L}$*. It indicates how meaningful an evaluable kirkin is.*

Definition 7. $\tilde{T}$ *is a function from* $\dot{E} \cap \dot{S}$ *to* $\dot{L}$*. It indicates how true an evaluable statement is.*

3.2.2 kirkinplexes and biding

We have now defined the overaching structure of our notion of truth. This subsection and the next will focus on the presentation of subparts of Ω.

We start with the notion of kirkinplex. Intuitively, a kirkinplex creates a context in which we can "evaluate" kirkins (we will say that we bind the kirkin to the kirkinplex). Because most ideas humans have only pertain to reality through a

certain set of assumptions and semantical modelisations, biding a kirkin through a kirkinplex is the main way to obtain an evaluable kirkin. If the target kirkin pertains to reality, then the kirkinplex we use must itself be bound to the basis. If not, the kirkinplex can still be "bound", but it is not bound to anything. The binding process is then simply a description of how the kirkinplex is supposed to operate. We now detail our modelisation of that process.

Definition 8 (kirkinplex)**.** *A **kirkinplex** is a special kind of kirkin. It defines a set of accepted kirkins, which can each be evaluable or not, and a way to bind those kirkins. The set of kirkinplexes is noted* $\dot{\kappa}$

The above definition is very vague, perhaprs downright nebulous. To help understand the idea behind kirkinplexes, I will repeat that they are a representation of the idea of logical system. The point is to consider some non-evaluable kirkins as "free" (in the sens of first order logic) and to give them meaning. In that regard, a kirkinplex is similar to a model of first order logic. It is used to give a context to meaningless variables, relations, etc which can then be evaluated. However, because I will not provide an exhaustive list of possible relevant types of kirkins, I cannot explain structurally "how" the kirkinplex gives meaning.

Therefore, I define a kirkinplex as a monolithic object, only saying that it somehow tells what to do when biding kirkins to it. A kirkinplex can accept evaluable kirkins to represent the possibility to "re-precise" or indeed change an idea.

We now define three biding operators to perform the following kinds of biding :

1. bind a non-evaluable kirkinplex (to the basis or not, the distinction will be covered by the description of the binding operation).
2. bind a kirkin to a kirkinplex
3. bind a kirkin through a kirkinplex, producing an evaluable kirkin

Definition 9 (Binding symbol)**.** *The set of all binding symbols is noted* $\dot{B}$*. A binding symbol represents a way to link a kirkinplex with the basis. This is easier to understand in the case of models, for which the biding symbol is a representation of how the model is supposed to describe reality. However, a binding symbol can perfectely well indicate that a kirkinplex is abstract and used to evaluate ideas separated from reality.*

Definition 10 (Basis-kirkinplex binding function)**.** *The function* $\tilde{\upsilon}$ *is defined on a subpart of* $\dot{\kappa} \times \dot{B}$ *and produces results in* $\dot{E} \cap \dot{S}$*. Using a binding symbol, this produces a statement that says "this kirkinplex correctely binds in this way".*

Definition 11 (kirkinplex-kirkin binding function)**.** *The function* $\tilde{\Upsilon}$ *is defined on a subpart of* $\dot{\kappa} \times \Omega$ *and produces results in* $\dot{E}$*. This produces an interpretation of the second argument in the context of the first argument. Whenever the second argument is in* $\dot{S}$*, so is the result.*

Definition 12 (Basis-kirkin binding function)**.** *The function* $\tilde{\Delta}$ *is defined on a subpart of* $\dot{\kappa} \times \Omega \times \dot{B} \times \dot{B}$ *and produces results in* $\dot{E}$*. Using a binding symbol for the kirkinplex and one for the normal kirkin, this produces an interpretation of the given kirkin "in absolute" through the context of the kirkinplex. Whenever the second argument is in* $\dot{S}$*, so is the result.*

Let us make a quick summary of these four definitions.
The binding symbol tell us how to bind a kirkinplexand kirkins can be bound to or "evaluated in the context of" a kirkinplex. Those two binding operations are respectively done through the functions $\tilde{\upsilon}$ and $\tilde{\Upsilon}$. To give meaning to a non evaluable kirkin, we use a kirkinplex. The process gives us a new kirkin that is "meaningful" in itself (that is to say, it is evaluable). The process requires four elements : a base kirkin, a kirkinplex, and two binding symbols. It is done through function $\tilde{\Delta}$.

A small remark : nothing here says that the result of an application of $\tilde{\Delta}$ cannot itself be a kirkinplex. indeed, if the entry kirkin is a kirkinplex, the result also tends to be one. When that is the case, it is perfectly possible to produce a chain of bindings to produce a larger global kirkinplex in which to bind basic kirkins.

3.2.3 types of kirkins

Now that I have given in broad lines the main elements of the model of truth I present, I will offer some precision on the nature of some elements through the listing of subtypes of certains kinds of kirkins. None of the following lists are meant to be complete and in most cases the subtypes are not mutualy exhaustives. As in most of this hellish to write chapter, I mostly wish to give a general description of the ideas behind the model.

Let's start with binding symbols and kirkinplexes. We describe four main types of binding symbols, corresponding to four types of kirkinplexes.

1. general model of the basis
2. general models of a part of the basis/another kirkinplex.
3. variable specific models of a part of the basis/another kirkinplex. Example : a physic model that also indicates when is "now." Such kirkinplexes are used to bind ideas such as "It is 3 am".
4. abstract systems

We will now list the main types of "usefull" kirkins. In other words, those are the kirkins that correspond to reasonably frequently used elements of language.

1. Objects
2. Statements
3. Caracteristics (mostly of objects)
4. Desirs or requests
5. "Craft" or "process" : A way to do a thing
6. actions
7. kirkinplex application in reality

8. Estimations
9. Classes of elements of this list
10. The reified idea of any element of this list

Thirdly, we list the main types of "internal" kirkins. Those are kirkins that are mostly used in the internal structure of objets.

1. Variables
2. Relations
3. Functions
4. Quantifiers
5. The reification operators
6. Other internal operators

3.2.4 Strucutral properties

The following properties are true in the model presented whenever applicable :

1. $\tilde{T}(\tilde{\Delta}(k,x,\mu,\mu_2)) \leq \tilde{T}(\tilde{\Upsilon}(k,x)) \wedge \tilde{T}(\tilde{v}(k,\mu))$
2. $\tilde{T}(\tilde{\Delta}(k,x,\mu,\mu_2)) \geq \tilde{T}(\tilde{\Upsilon}(k,x)) \vee \tilde{T}(\tilde{v}(k,\mu))$
3. $\tilde{M}(\tilde{\Delta}(k,x,\mu,\mu_2)) \leq \tilde{M}(\tilde{\Upsilon}(k,x)) \wedge \tilde{M}(\tilde{v}(k,\mu))$
4. $\tilde{M}(\tilde{\Delta}(k,x,\mu,\mu_2)) \geq \tilde{M}(\tilde{\Upsilon}(k,x)) \vee \tilde{M}(\tilde{v}(k,\mu))$
5. $\tilde{T}(\tilde{\Delta}(k,x,\mu,\mu_2)) \leq \tilde{M}(\tilde{\Delta}(k,x,\mu,\mu_2))$

The last property is different to the others. It express the idea that "a statement is never more true than it is meaningful".

3.3 Kirkin bishing

3.3.1 General idea

Kirkin "bishing" is a representation of the process of producing new kirkin through a string of steps, all of which produce a new kirkin. It is a representation of certain thought processes, and a preliminary work on discussions about the notion of "rigorous thought". I have previously produce the notion of inference systems to discuss epistemic logic. Inference systems were a formalisation of some of the ideas behind "proof systems" as they are often used in the mathematical field of logic. I will reuse some of the ideas from the notion of "inference systems" to describe kirkin bishing. The main differences are thus :

- Inference systems were described in ZFC, which is well ordered. This required some workarounds and is not an issue here.
- We use kirkins as objects instead of formulae.

3.3.2 Description

Because I am currently discussing kirkins and have not introduced anything human or even time related, bishings are described as static objects.

Definition 13 (bishing)**.** *A bushing is a string of steps. Each step has multiple entries, a rule, and a product. The entries are kirkins which the rule accept, producing the product.*

We introduce well formed bishings as bishings that are well structured with regard to the idea that they aim to produce new kirkins from a basic set of kirkins. When we speak of kirkin bishing, we assume they are well formed.

Definition 14 (well formed bishing)**.** *Every rule can, for each of its entry, require it to be pre-bished or not. A bishing is said to be well formed with regard to hypothesis set E iff at each step every entry kirkin that is required to be pre-bished is either in E or is in the product of a previous step.*

3.3.3 Reasoning and definition

The point of describing bishing as using rules is that it allows us to state that there exist some specific caracteristics of the functions $\tilde{T}$ and $\tilde{M}$ such that bishing kirkins using only some specific rules gives some guarantees.

A good example, that I consider fitting to make everything clearer, is that of logical reassoning. Let's say we do some kirkin bishing using only the basic rule of logical inference. If we produce a well formed bishing with regard to a set of hypothesis that contain only perfectly true statements, then all of our products are true as well. Of course, this assumes that truth is indeed structured as we assume it is when we discuss the basic rules of logic.

I will not attempt to list the frequent sets of rules used for certain kinds of thoughts. However, I will point out that the goal of my description of kirkin bishing is to describe in abstraction the process behind inference or definition.

Working Note: Once I start on the topic of human thought, reflexion, and rigor, I should see how I can clarify, extend, and offer variations of the terms "reasoning" and "bishing"

3.4 Discussion

Some of the choices made in the above presented model require a degree of justification. The presentation of the model was not made jointly with an explanation of the ideas behind its construction. However, I bellieve some specific points are worth explaning separately, both to raise attention to the fact that a choice had to be made and to explain the final decision.

3.4.1 Existence of non-absolute truth

The first such choice is the choice to use a correspondence model with varying degrees of definition and truth. At first, I was presented with two conflicting intuitions. It seemed to me that absolute truth had to be constrcuted in an human independent fashion because there are facts that seem to be independent of the existence

of humans. However, it also seemed to me that partial truth was best cosnidered a human notion. After all, some truth are only comparable within the context of an ill defined human intuition. How then could it be considered as having a separate existence ?

I chose to consider everything as having the same degree of existence, presented as human independent in the model. However, I am conscious that in doing so the notion of truth presented has to be at least somewhat relative. I consider the model to be presenting itself as absolute. In other words, the model simply "is" and does not offer ways to discuss its change. I simply consider that the model describes a notion of truth, and that the notion of truth used by a specific human can be different to that of an other human. However, I also consider that most "right" notions of truth fit the presented model at least somewhat.

3.4.2 Additional properties

Provided that truth fits the model presented, the details of how the function T works are still vague. One might notice that as is, it is perfectely possible to choose $T(x) = \top$ for all x without encountering any issue with the presentation of the model. My current answer is that many properties seem implicit regarding T. My reason not to list them in the model descriptino is that even though many things feel obvious in general, I struggle to give them a satisfying formulation to express as a caracteristic of T. Hence, I will simply say that T mostly behaves "at least as is obvious, when it has an obvious behavior".

3.4.3 Lattice

One might wish to question my choice to use a bounded lattice to rate the degrees of truth and meaningfullness. Well, sometimes the degree of truth of two elements are incomparable. Therefore, I needed a poset and not simply a totally ordered set such as $[0; 1]$. To represent absolute truth and falsehood the poset had to be bounded. Beyond that, choosing a lattice rather than just any poset was a choice I made to have access to the properties of section 3.2.4. These property appear desirable, but I am not certain that a better structure can not be found. Notably, using a strucure that allows to define the complement of any element might prove usefull. I however leave such modifications to future developements. It seemed obvious that there should be any number of intermediary levels between any two levels, and so I simply added that property as a supplement property of the lattice.

3.4.4 Ideas

Ideas are not present in this model. They are seen as the correspondents in human minds of kirkins, but ideas and kirkins are still different entities. However, the begining of the informal presentation of the model allows itself to use the word "idea" instead of "kirkin", in order to convey the general idea in advance. Overall, we deem it an acceptable form of language abuse in most situations to speak of an "idea" instead of a "kirkin".

3.4.5 Probability

The notion of probability (or indeed even randomness) is not part of the model as the model does not feature evolution of its prime components. Instead, any given model of probability has to be presented as a kirkinplex. It bears reminding here that the model is a model of truth and meaning, not of language or thoughts.

3.4.6 A small addition

It is worth noting that the model of truth presented here is itself a kirkinplex withing itself.

3.4.7 Overall quality of the model

The question is worth asking : what is the point of such a model as it stands ? Even though the model is lacking in precision and completeness on different points, I bellieve it can be somewhat usefull. I see that model as a way to clarify the fundamental for other future reflexions of higher levels. A goal of the model is to give an end to the process of recursive deconstruction when trying to be rigorous.

Chapter 4

Human Mind

This chapter admits the following requirements.

- Surface understanding of chapter 3 regarding the notions of kirkin and kirkinplexe.
- The ability to read a chart.
- Basic understanding of the notion of "modelisation".

This chapter requires some thinking on the part of the reader is still intended to be read in a somewhat linear fashion.

4.1 Foreword

In this chapter, I will introduce a description of the working of human minds and of the human paradigm regarding its own thoughts. That description was mostly obtained through introspection and thought experiments. Hence, it will be biased toward my personnality and how I assume others to think. It is also of course perfectly imperfect.

What is a human in that context ? How narrow is my definition ? How similare to me do individuals have to be to be taken into account ? Not that much, but I do not ambition to produce a description that could fit every single possible states of mind for a human. A good first limite is insanity. I assume and accept that there are states of insanity that are not well represented by my descriptions.

Beyond that, the answer will depend on the section of the chapter you are in. The first section will describe a very genric model for the working of the human mind, that part should very broadly cover humans. Then, difference sections will use this model to describe how human think. This will include cultural specificities and I do not profess to be able to pinpoint them all accurately.

Another point of interest is that this the model and following discussion presented here should be seen as a foundation layer for discussions on the human mind and the human perspective. And give a model and a description of the mind but said model contains vast parts that are not completely detailed. This leave room to discuss the

human perspective and the working of the human mind withing the terms of the models. I give the knobs, it is left to the futur to understand how they are set up.

4.2 General model

This section will describe the basic general model of the human mind upon which much of what follows will be based. I bellieve it will help if I now give an intuitive answer to the question "what is a mind, anyway ?". From an intuitive standpoint, we can say that the mind of a human is a mathematical abstraction of the process that governs the human's behavior and decision taking abilities. The abstraction is considered at a scale compatible with the notion of "human entity" (no discussing atoms) and allowing to quickly represent the ideas a human has about how it works (the human).

This section takes a place in this document at a point at which I am still laying the contextual groundwork in which futur reflexions will (mostly) take place. In that regard, I am mostly offering arbitrary and imprecise models that are supposed to reflect a certain understanding of the fundamental topics at hand. This is fantastic and very enjoyable to do and -I am sure- to read, but might get a wee bit tedious if I do not help the reader understand, at least to some extent, why I make the choices I do. Hence, the model and my description of its parts will borrow vocabulary from the usual set of words used to speak about human mind. That is simply a way to help build intuition, and in now way a commitment to use these words in whatever fashion old fools and geniuses saw fit to define them.

I do not wish to enter the question of the definiton of a specific mind and the difference between minds, a mind, and a mindstate (this is similar to the problem expressed in the story of the boat of Theseus). That is a different topic for another time. For now, I will simply describe a mathematical model for a specific kind of system and say that the mind of a human can be described through this model as one such system. The model of minds is the general descriptions which can accept instances. A mind is one such instance, and that concept isn't parfectly clear. A mindstate is the state of a mind at a specific point in time.

The model considers the human mind as an interconnected system evolving through time. Time is considered to be isomorphic to $\mathbb{R}$, in the obvious way. We consider a mind to be comprised of several parts with inputs and outputs. At any time, the parts have a state which can evolve both by itself and under the influence of the inputs. Parts have no memory. Their variation is entirely defined by their current state and their inputs. The output is, in turn, a direct function of the state of the part. I have chosen not to give a precise mathematical description of that process. As will soon become apparent, the states and the inputs/output need to be rather complex objects, and I do not intend to tackle the work of representing the corresponding sets of possibilities right now. Besides, insofar as I lack a perfect definition of the human mind, such an effort would probably amount to very little gain in understanding. Just think of something similar to how mechanical systems are often described used partial time derivative equations.

Figure 4.1 gives a summary of the various parts used to represent the human mind and their connections. The "change" part can have an effect on many other

parts which is no represented in the figure (see parts description bellow). Save for that exception, every effect is represented on the figure by an arrow. Hence, a part is determined by everything that is connected to it by an arrow (again, save for the "change" effect). On this figure, boxes represent a normal part. Circles are a representation of external inputs, and diamonds are parts that have no inertia (the state is a direct function of the inputs).

I will now devote most of the rest of this section to a part by part description of the diagram from figure 4.1.

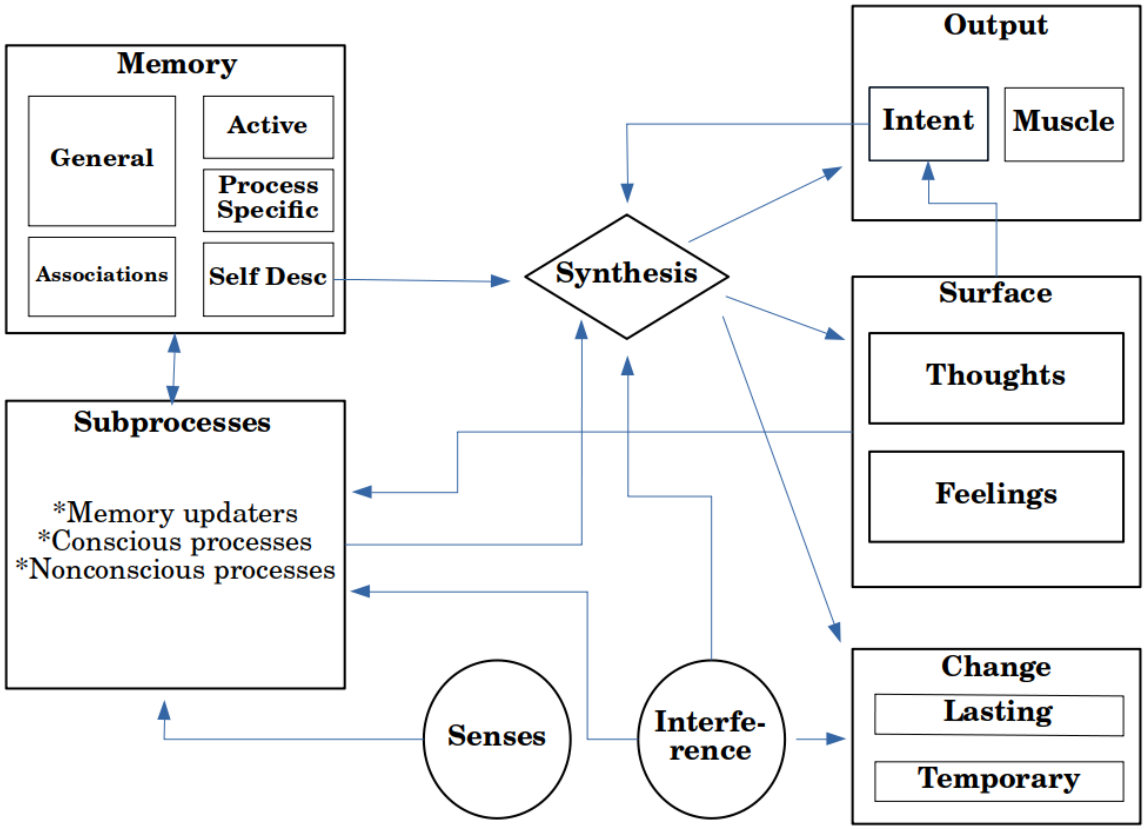

Figure 4.1: General model representation

Senses represent all normal inputs for the mind. Mostly this simply mean what we perceive through our senses, even though I do not exclude the possibility for another kind of input to fall into that category.

The interference is a representation of the ability for changes in the physical world to influence how we think outside of the effects of senses. The best example is certainly that of alcool, but I also include the effect of sports and similar processes.

The surface represents what we "feel" as our thoughts, emotions, and everything else. The description of the train of thoughts of a specific human amounts

to the string of states through which the surface of his mind goes. One could say that the surface is a representation of our awarness. The surface can be said to "contain" or to "realize" various "perceptions". I identify two main classes of perceptions : thoughts and feelings. The surface is entirely determined by the synthesis.

The output represents what our mind "concluds to". This includes the decision to move in certains ways (indeed, the decision to move the various muscles required to breath is a part of the output). However, I include a second part, "the intent". While the rest of the output is determined by the synthesis, the intent is directly determined by the surface. It is an expression of our resolve and of the decisions we take, especially concerning ourselves. The intent influences the synthesis. That process is largely what we call "the application of our will".

The memory is, to everyone's surprise, a representation of the human memory. It contains different kinds of "memory units" and I do not professe to have an exausthive list. Let's list what I did include.

- General memory : longterm non specific memory
- Associations : a part of memory dedicated to linking memories and ideas with one another, and to giving ratings on relevant scales to some specific concepts. Example : we store how likely we consider some statements to be true, and how much we like certain things.
- Active memory : short term low capacity memory. The whole system is set up so that whenever something is loaded into this memory unit, a corresponding thought forms on the surface. In other words, we are aware of what goes into this memory.
- Process specific memory : a catchall term for all memory that is dedicated for use only by a handfull of subprocesses (see the relevant entry on subprocesses).
- Self description : stored information on the way we are. Directly influences the synthesis.

The only think that can update the memory is a subprocesses (yet again, save for the change effect).

The subprocesses are where most of the actual work occurs. The idea behind them is that the human mind makes use of many processes to handle specific intellectual tasks. Processes exhibit a lot of variety, ranging from those which handle inconscious breathing to those we use for complexe logical reasoning. Subprocesses have different inputs. They can have access to the memory and are influenced by the mind's inputs and by the current state of the surface. Of course, not all subprocesses need to use all those inputs.

The synthesis is simply the process that takes the set of the effects of all suprocesses and determines what we end up thinking and what we output. It is mostly a summary of the subprocesses, but the way that summary is made is influenced

by several parts. This decides which subprocesses "win" when they are opposed, which are deemed important and which are ignored, and so on. The synthesis is impacted by what we are, by our current intent, and by external interferences. It also determines the change.

The change is the representation of the way the mind can change. If we think that every part is a function that is influenced by the inputs and the state of the part, then the state of the change can be seen as an implicit secondary argument used everywhere and which correspond to the ability of the parts to evolve. Changes are divided into two main kinds : temporary and lasting. As a rule of thumb, lasting changes tend to be the result of repeated synthesis effects (we might develope a new subprocesse to handle a specific frequent situation) whereas temporary changes are mostly an effect of immediate outside interference (ie booze). However, this rule accepts some exceptions. For example, sudden brain damage.

Most of the work for this section is done. This paragraph provides a few additions, one per indentation, which should prove to be lighter reading than what came before. At least, I hope so. What I wrote above does not exactly fit my own definiton of "well worded and enjoyable to read".

Now that all the parts of the model I intend to use have been described, it is my hope that a reasonnable dose of reasoning will lead the reader to an understanding of said model.

The language abuse in which we speak of someone's mind to speak of the instance of the model representing that person's mind is to be tolerated and even encouraged.

Finally, I would like to point out that the model makes no mention of the practical physical parts of the brain that are supposed to implement the features represented. Nothing says that every part of the brain belongs to at most one part of the model and, even if that were the case, nothing says brain portions that belong to the same model part have to be physically next to eachothers.

4.3 Processing and functioning

4.3.1 Thoughts, ideas, and kirkins

The time has come to go through a few points of vocabulary and to connect what I described as a modelisation of the human mind with was I presented earlier as a definition of truth and meaning (see chapter 3). As the title of this subsection might have lead the most astute of readers to guess, I will talk about thoughts, ideas, and kirkins.

Let's begin with thoughts. They are the basic elements that can be present in the "thoughts" part of the surface and of course, they give it its name. The notion of thoughts I intend to use isn't very different to what most people who delve on the subject would offer (as of the time of writing). Raw feelings do not count as thoughts, but most other things that can be "in" the surface are. Notably, anything we might envision was said by our "inner voice" counts as a thought. When a thought is present in the surface, we say it "occurs".

Ideas are closely linked with thoughts. They are an abstraction for a part of the

way the mind works and are to be conidered as "objects". They can correspond to a string (or sometimes simply set) of thoughts, be stored in memory, or be implicitely used by some subprocesses. Ideas can correspond to a single thought, but some ideas are never expressed with a single thought. There is no inherent limitation on the complexity of an idea, given an arbitrarily large number of thoughts. As an abuse of language, it is perfectly fine to consider that some ideas "are" thoughts, insofar as they always correspond to the same thought.

Ideas correspond to kirkins. Not all kirkins correspond to an idea but all ideas correspond to a kirkin. That correspondance isn't capable of reaching kirkinplexes. What might come closest is "the idea of a model". We discuss that point in subsection 4.3.2. For the purpose of what follows, I even assume that all ideas perfectly correspond to a single kirkin. In that respect, I tolerate yet one more abuse of language, confusing ideas with the related kirkins.

4.3.2 Models

Working Note: The use of models by humans will probably warrant a more complete examination later **Working Note:** I still hesitate to introduce ideoplexes instead Many human ideas take place in a "model of something". When you discuss a car and you say "the engine", you are already refering to a set of connected assumption about how cars are made. That is what I call a model as used by a human mind. It bears noticing that a model isn't necessarily a model of *something*. A good example would be mathematical theories, which give meaning to some statements and ideas, but are not a model of anything inside reality. It is reasonable to consider that models correspond to kirkinplexes. However, models are not ideas, whereas kirkinplexes are themselves kirkins. It is still perfectely possible to reify models as ideas through "the idea of", as can be done for kirkinplexes. I see no need to develope further on what models are for now, the intuition is very similar to that behind kirkinplexes.

Models can be created by the mind, they can be stored in memory, and they can be updated (and often are when they are used). When the mind handles ideas that require a model, subprocesses can create and use parts of the corresponding model. The important notion here is "parts of" : there is often no need to recall the entierty of the model. In fact, even when updating the model, there is no need to conssider it in its enterty, and various parts of the model can be forgotten at different rates. Indeed, there is often no need for a whole model to exist when we act as if it did, and sometimes it does not. A part of that effect is that we often handle our ideas in light of a bundle of model parts that do not really work together, frequently because they use varying degrees of precision.

Last addition to this subsection, I will say that when creating or updating a model, we often copy the structure of pre-existing models.

4.3.3 The base model and the base process

Working Note: Might produce a more in depth examination someday, dunno.
We, humans, have a base model of reality and broad lines for the way we function.

The model itself includes many assumptions about the way things are, which are difficult to pinpoint and challenge (though not impossible). A good example would be our base perception of time. However, beyond the base model we find the base process. It is constructed through the general strcuture of the mind, and through the way base ideas and subprocesses are set up. Mostly, I am getting at the fact that a large part of our way to act and think seems natural to us.

One part of this process upon which I would like to elaborate a little bit is our use of probabilities and estimations. Overall, I would say that bayesian probabilities are a good representation of the model we wish we used for our estimations of likelyhood. I consider our use of such estimations to be based on bits and pieces of models localy arranged to satisfy the description given by probability theory. However, even localy, the system struggles with very low or high probability.

I will also add that we probably (*eh, funny*) maintain sevral probability models at the same time, interctonnecte with each others. To illustrate this last point, one can think of the fear of the dark in situations in which one is certain that there is nothing to fear.

Of course, our estimations are mostly stored in the "association" part of the memory.

4.4 Rigor

Last but not least, this section will introduce a few words and notion to describe how humans think when they try to produce and extract meaning and truth. I am saddened to say that this will mostly mean more arbitrary definitions to be used at a later time. Very annoying, I am sure.

4.4.1 Rationality

Let's start with rationality. "Rational" is a catchall adjective for thought processes that require a degree of awarness of the working of the subprocesses involved in the process. One could say that rationality is the quality of the mind that is aware of its own thinking. Awarness of a thing is the presence of a corresponding idea in one's surface part of the mind. Ideas can be more or less complete and provide imperfect descriptions of things. As such, rationality is not a perfectely binary quality. One can be more or less rational.

The awarness doesn't have to be perfectly concomitent with the thinking. For exemple, someone who simply does calculations by pure trained instinct is, by default, not acting rationaly. However, if that same preson purposedly trained that same instinct and thought before doing the calculations "I will now use my trained instinct which often works well", then the whole proccess can be considered more rational.

Now seems like a good time to mention the "Dual Process Theory", which I found described on the LessWrong forum [5]. Said theory posits the existence of two types of processes within the human mind : type 1 and type 2. The following

sentence is taken from the description found on the LessWrong wiki. "Type 2 (also known as System 2) processes are those which require working memory, and Type 1 (also known as System 1) are those which not." What they call working memory is roughly what I called active memory. It would be false to say that type 2 systems are those used in a rational reflexions, but I still bellieve that the ideas can be linked. However, pure uncotrolled instinct based on the current state of mind would, in my understanding, still count as type 2. It is not in my eyes rational. **Working Note:** Still not sure I perfectly understand their idea.

As mentioned before, one can be more or less rational during a certain process. I will use the following scale. It is not itself very rigorous, well defined, or detailed, and is mostly designed as a quick tool.

- A : very good understanding and awarness. Example : constraining oneself to following the use of a mathematicaly rigorous proof systems.
- B : overall understanding of one's mental process and of the strucure followed by one's thoughts. Example : most scientific work. Most proofreading.
- C : decent understanding corresponding to a calm and self aware individual. Example : most people's daily life thinking when focussing on the thinking.
- D : everything bellow stage C, overall lack of understanding over one's thoughts. Often correspond to a lack of control.

Working Note: This scale will probably go to waste once I start working on mind tools.

4.4.2 Idea bishing

Idea bishing is the process of having a string of ideas be sequencialy present in the surface. The ideas can be linked the previous ones or to a starting set of ideas by "rules". They are then said to have been produced "using the precedent ideas".

The ideas do not have to be new to the mind, and bishing is not necessarily rational. Of course, the reason to introduce idea bishing is to see it as a correspondent to kirkin bishing. Once again, we look kindly upon the obvious language abuse this suggests and allow the extension of the vocabulary for kirkin bishing to idea bishing.

We also introduce cogitation, which should strike no reader as a new concept, even though the word itself is nonstandard. Cogitation is simply idea bishing that occurs with the goal of producing statements that are true (or whatever concept similar to "truth" the mind happen to be using).

4.4.3 Weak rigor

Now is not the time for the introduction of the kind of rigor I am most interested about. That is called "Wogian rigor" and will be presented in another chapter. For now, let's talk about the idea of rigor and rigorous thinking in itself.

Let's consider the notion of rigor in general. What we mean we say that someone or something is rigorous. It occurs to me that some readers might wish to annoy me with homonyms of what I obviously mean. Fuck off.

Anyway, as is often the time with such words I found that the word is used in many contexts with as many different meanings, but always hinting at the same central idea. No need to waste time : it is currently my best honnest bet that rigor, in general, means adhesion to a given well defined protocol. The stronger the adhesion and the clearer the definiton, the higher the rigor.

This constatation lead me, where it comes to thinking, to define "weak rigor" as the propriety of rational bishing that limits itself to certain rules.

Stronger kinds of rigor can be introduced by specifying the set of rules used. All in all, secondary kinds of rigor should all imply weak rigor.

Chapter 5

Rigor and cogitation

This chapter admits the following requirements.

- Surface understanding of chapter 3 regarding the notions of kirkin and kirkinplexe.
- The ability to read a chart.
- Basic understanding of the notion of "modelisation".

This chapter requires some thinking on the part of the reader is still intended to be read in a somewhat linear fashion.

Contents

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