

Lessons - A Way to Think - The Null Case

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Introduction

Have you ever noticed the expressions **Interested** and then **Disinterested** and **Uninterested**.

Have you wondered why some people use these words? Are they mixing things up or do they think there is a difference in meaning?

Do you think there is a difference in meaning between the words?

I may be able to explain **a way of thinking** about this which may help you understand these differences.

Hints:

The Null Hypothesis - https://en.wikipedia.org/wiki/Null_hypothesis

Ronald Aylmer Fisher/Ronald Fisher - Lifespan[1890 to 1962] Rank(10) Keyword(Evolution Maths Statistics), Wikidata(Q216723) https://en.wikipedia.org/wiki/Ronald_Fisher

<https://academic.oup.com/ije/article/32/6/938/775148> <https://www.genetics.org/content/154/4/1419>

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Neti Neti https://en.wikipedia.org/wiki/Neti_net

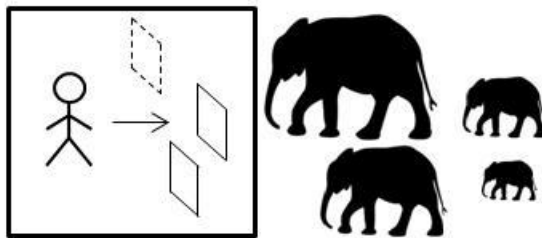
The White Horse Argument - Shape and Colour https://en.wikipedia.org/wiki/White_Horse_Dialogue

The Definite Not <https://humanistman.com/wp-content/uploads/2024/10/The-Definite-Not.pdf>

A Way of Thinking - Schemas

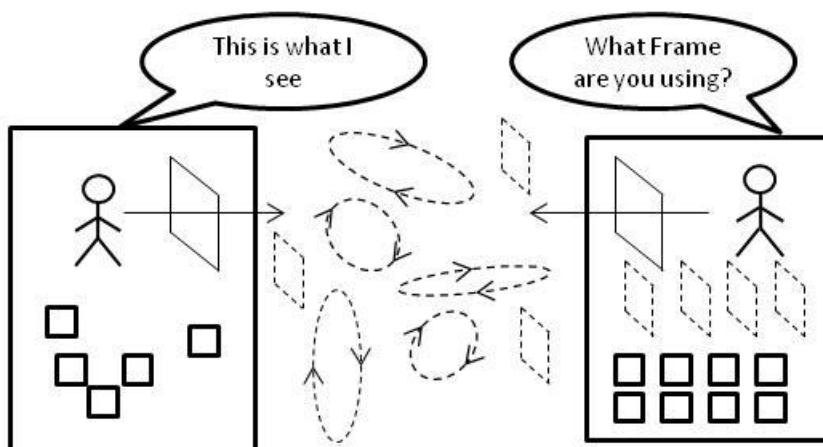
Words have meaning and people will use words differently.

A Schematic View of the World



We each carry around in our heads words and meanings for words which will be different for each person. Much of communication difficulties between humans is based around these different meanings.

Communicating with others using our Schemas



It takes a great deal of time and effort to learn words, ideas and develop our schemas for understanding the world around us.

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Jean Piaget - Lifespan[1896 to 1980] Rank(20) Keyword(Education), Wikidata(Q123190)

https://en.wikipedia.org/wiki/Jean_Piaget <https://archivespiaget.ch/en/>

Robert Kegan - Lifespan[1946 to] Rank(50) Keyword(Education)

https://en.wikipedia.org/wiki/Robert_Kegan http://www.shiftingthinking.org/?page_id=449

<https://www.hup.harvard.edu/catalog.php?isbn=9780674272316>

Are You Interested or Not?

If someone asks you whether you are interested you will often say either *Not really* or you will want to express the idea that you could “*take it or leave it*” that you are not interested “*one way or the other*”.

The problem with communication is that many people do not know what this means and have real difficulty understanding the meaning so they will FORCE a **binary response** which is

“Well ! Are you coming with me or Not coming with me!”

The 4 Box model

An easy way to frame this discussion is to visualize a **4 Box model**.

This is sometimes called a **Confusion Matrix** - a way of laying out the problem to make it LESS confusing.

https://en.wikipedia.org/wiki/Confusion_matrix

4 Box model Confusion Matrix		The initial position is presented as a binary situation - that you are either Interested or Not interested - that there are only two options for you to choose from. This is the common binary framing technique that most people habitually adopt.
Interested	Not Interested	
Interested	Not Interested	But we can notice the there is the idea that you might have a little bit of interest and little bit of non interest as well - you are not fully Interested nor are you fully Not Interested either.
Interested	?	

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We can explain this a little more using the same framing technique using the concepts Black and White.

So what we see is that there is once again a binary position of Black or White.

This is like the binary position of Interested or Not interested.

But we can also see that the top left Box shows the mixing of ideas - a Mix of Black and White (which we might call "Shades of Grey") and it is the **same kind of mix** of Interested and Not Interested.

4 Box model Confusion Matrix

Black White

Black White	White
Black	?

So what we have discovered using this technique is the idea of "**Something in the middle**" - a mix of two binary positions - between the two binary extreme positions of either Black or White.

If you mix Black and White paint then you get many **shades of Grey** depending how much Black or White you put in.

For many people this is much as they can understand. What they cannot understand is the bottom Right Box where I have put the Question Mark.

These types of word and logic problems can seem quite complex and have occupied thinkers, philosophers and scientists for thousands of years. Very few people understand this discussion or framework. Most people stay stuck in Binary Certain Logic and Binary Certain Choice. I call this Level 2 thinking - the Binary.

Less than 1% of humans understand this discussion or why it might be important. So if this discussion provokes some ideas and thoughts in you then you might be part of the small percentage of humans who understand this. If you start to understand this then I call this the beginning of level 3 thinking.

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The Bottom Right Box of the 4 Box Model

When people use the expression **Disinterested** they are trying to express the idea of **Neither** Interested **Nor** Not Interested - the **Double Not**. The **Neti, Neti**. The **Null Hypothesis**.

4 Box model Confusion Matrix

Interested Not
Interested

Interested Not Interested	Not Interested
Interested	Disinterested Neti, Neti Niether, Nor Not, Not

Most people struggle with understanding this which is why the idea in history has tended to be only well understood by philosophers and thinkers and they spent many hours writing things down and trying to show people who were stuck in Binary thinking. People could get the idea of mixing Black and White paint into shades of grey but they struggled with the idea of the 4 box model and the null Hypothesis which is Neither Black Paint nor White paint nor a mix.

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4 Box model - Medical Tests

The same structure can be applied to testing medicines to see if they make things better or not. Again we have two binary positions - Did the Medicines work - i.e. make the patient better or did they Not work. This is exactly the same idea as Interested or Not Interested binary positions.

Was the problem **Fixed** or **Not Fixed**?

The **Null Hypothesis** is the bottom Right box and the initial starting position. Without doing some kind of testing you cannot say anything worked or did not work. You also cannot say whether there was “mix” of something working and some things not working.

This Null hypothesis seems to have been the most difficult thing for many students - including university students - to understand. **Fisher** relates his experiences trying to teach students this relating to statistical significance testing for repeated tests and the statistics from those tests. See **Fisher's Exact test** https://en.wikipedia.org/wiki/Fisher%27s_exact_test

4 Box model Confusion Matrix

Fixed

Not
Fixed

Fixed Not Fixed	Not Fixed
Fixed	Null Hypothesis

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Benjamin Franklin and Mesmer in Paris - The Double Blind test

In France in the 1700s there was a huge growth in science. Mesmer seems to have developed techniques using what he termed “animal Magnetism” to cure patients. **Benjamin Franklin** helped develop the idea of the double blind test to help test his claims. Some patients had reported being better as a result of Mesmer’s method but scientists wanted to know what was going on. They had many questions. This was a major step forward in science.

Benjamin Franklin - Lifespan[1706 to 1790] Born_Loc(Milk Street, Boston, Massachusetts Bay, English America) Rank(40) Keyword(Philosophy, Science, Invention, politics, statesman, diplomat, printer, publisher, Free Speech, Education, Postmaster), Wikidata(Q34969)

https://en.wikipedia.org/wiki/Benjamin_Franklin <https://www.britannica.com/biography/Benjamin-Franklin> <https://fi.edu/en/science-and-education/benjamin-franklin/famous-quotes>

Franz Mesmer/Franz Anton Mesmer - Lifespan[1734 to 1815] Born_Loc(Iznang, Bishopric of Constance (now Moos, Baden-Wurttemberg)) Rank(80) Keyword(Hypnosis, Electricity, Animal Magnetism), Wikidata(Q160202) https://en.wikipedia.org/wiki/Franz_Mesmer

<https://www.cabinetmagazine.org/issues/21/turner.php>
<https://www.historyofinformation.com/detail.php?id=3940>

https://en.wikipedia.org/wiki/Royal_Commission_on_Animal_Magnetism *The Royal Commission on Animal Magnetism involved two entirely separate and independent French Royal Commissions, each appointed by Louis XVI in 1784, that were conducted simultaneously by a committee composed of four physicians from the Paris Faculty of Medicine (Faculté de médecine de Paris) and five scientists from the Royal Academy of Sciences (Académie des sciences) (i.e., the "Franklin Commission", named for Benjamin Franklin), and a second committee composed of five physicians from the Royal Society of Medicine (Société Royale de Médecine) (i.e., the "Society Commission").*

What this exercise showed was that many people were convinced and acted as if the problem was “fixed” when in reality they were not given any medicine at all. This called the **Placebo** effect.

<https://en.wikipedia.org/wiki/Placebo>

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The White Horse

The ancient Chinese White Horse discussion is really about separating out the ideas of Whiteness and Being a Horse. There is no specific mention of the null case.

4 Box model Confusion Matrix

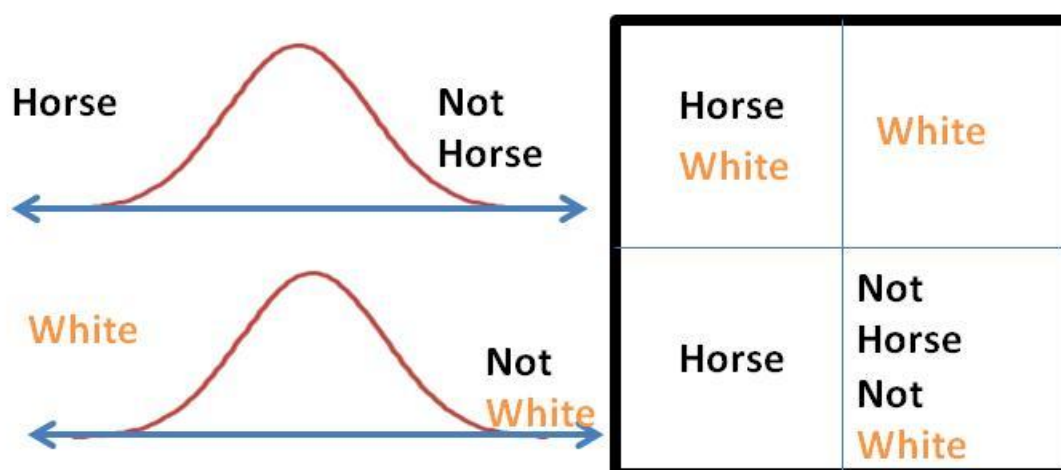
Horse White

Horse White	White
Horse	?

The Definite Not

What we can see from this process is the implication of a Not - a Not for the Horse and a Not for the White. Each declared or asserted thing has it's own definite Not. This might be represented on some kind of continuum which is conveying the meaning that at some point you can declare a Thing to Be a horse and at some point you can declare it not to be a horse but it is not exactly clear where that point might be.

Which then explains the double Not in the bottom right corner and also shows that there some kind of continuum involved - that is not simply a binary choice of exactly white and exactly horse in a binary certain way.



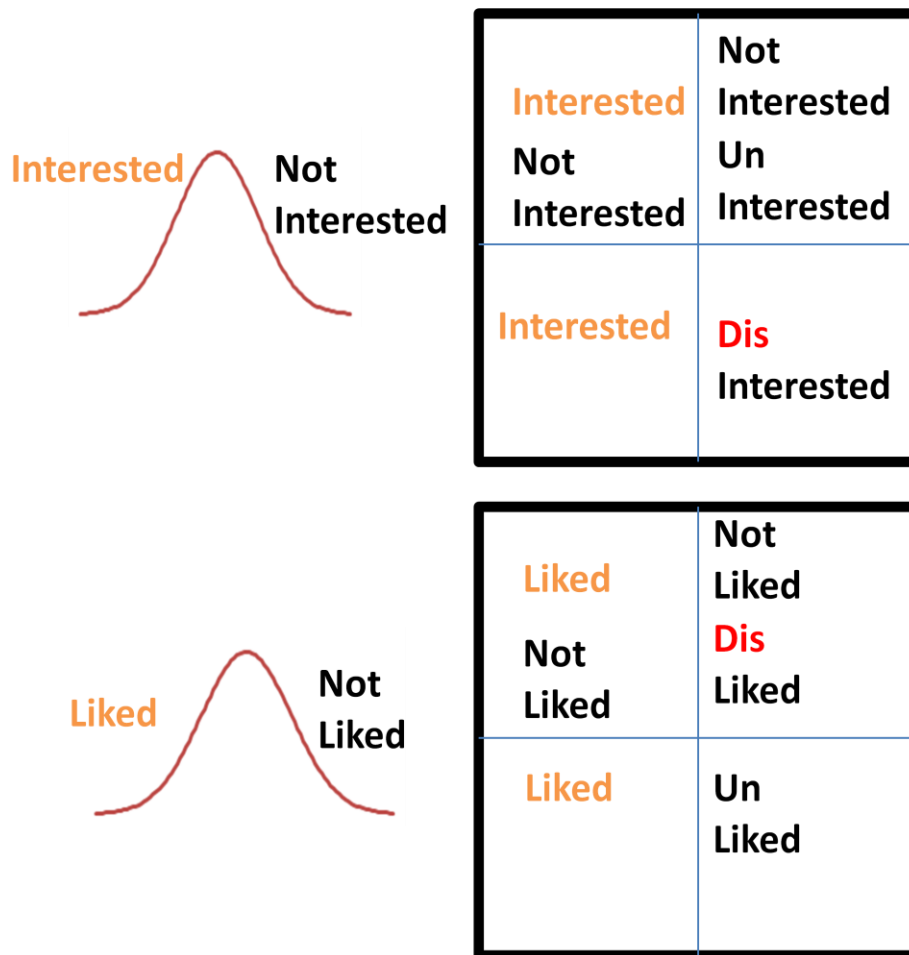
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Extension - Not, Un, Dis - Confusions in Language

There is no language I know which describes what I have described above in a consistent and coherent manner. This structure is not obvious nor has it been modeled in any culture in history that I have examined in the form I have described above. SQL uses a Null but not as a double Not.

<https://en.wikipedia.org/wiki/SQL>

English words like **Liked**, **Unliked** and **Disliked** run counter the structure of **Interested**, **Uninterested**, **Disinterested** because the “Dis” meaning is in a **different place**. So English is not consistent.



References

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