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# 1. Phenomenology and Cognitive Science



Department of Philosophy and History of Science

## **Our Plan for Today**

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**A. First Person Character of Consciousness  
– A Gap in Cognitive Studies**

**B. Phenomenology**

**C. Cognitive Phenomenology**



## A. Science in General

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- A way of pursuing *knowledge*
- Science developed as a distinct *enterprise of defining "laws of nature"*
- *Implied* exclusion of pure *mathematics*.
- The Oxford English Dictionary: *scientific method* is: "a method or procedure (...), consisting in *systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses.*"



## A. Objective Scientific Observation

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Objective Scientific explanation requires:

- Experience is described by objective terms
  - *A third person* approach
    - The perspective of scientists as external observers
    - Ignores personal factors
- Experience are isolated meaning attention is focused only to the examined phenomena
  - no attention to the observer's consciousness
    - i.e. For observing the Mars's surface does not involve the analysis of scientist's consciousness



# A. Cognition

A faculty for the processing of information, applying knowledge, and changing preferences.

Mental processes:

- Attention
- Remembering
- Producing and understanding language
- Solving problems
- Making decisions
- Consciousness

**As a Science from a third person approach**



# A. Brain Science of Bats I.

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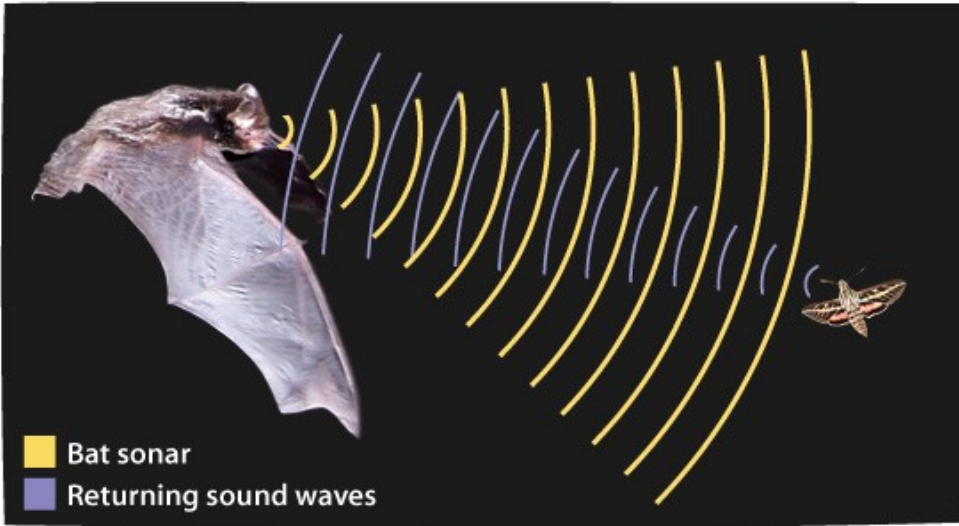


## Suppose:

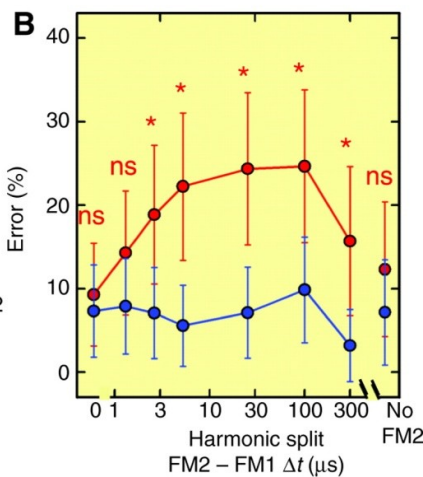
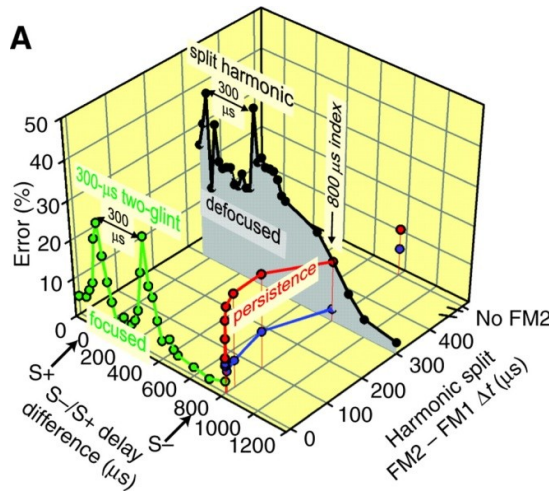
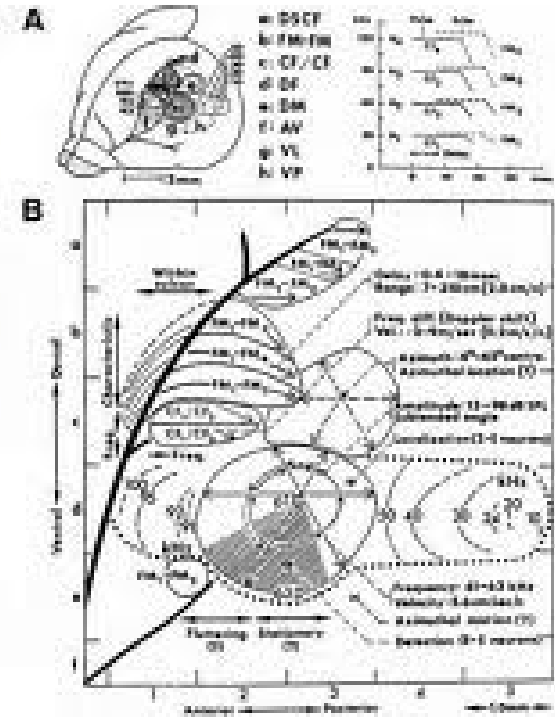
- We have a perfect knowledge of bats' nervous system
- We can absolutely understand their brain work
- We can predict their behavior in 100%
- We understand *how* their perception – echolocation – works



# A. Brain Science of Bats II.



Functional maps of biosonar signals in the auditory cortex of the echolocating bat



# Third Person Approach

Mary E. Bates, James A. Simon. "Perception of echo delay is disrupted by small temporal misalignment

of echo harmonics in bat sonar", *The Journal of Experimental Biology* 214 (2011): 384-401.



## A. Brain Science of Bats III.

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### What can we know?

- Can we have the perception of bats?
- How does the perception of bats 'look' like?
- *What is like* to be a bat? (Nagel: 1974)
- Is it possible to create a first person account of perception of bats?





# A. Brain Science of Bats IV.

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## A. Brain Science of Bats V.



How do we know what colors the background and figures have?



Humans cannot have colorless experience

It is (logically) impossible to conceive snapshot-experience without colors



**By studying the brain only it is impossible to grasp the nature of – in this case, Bats' – consciousness.**



*(We cannot be the Batman)*



## A. Cognition

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A faculty for the processing of information, applying knowledge, and changing preferences.

Mental processes:

- Attention
- Remembering
- Producing and understanding language
- Solving problems
- Making decisions
- **Unique first person experience of the stream of consciousness**



## A. Your Turn!

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- ❖ What do you think/know about the presented ‘problem’?
- ❖ Does it pose a problem for cognitive psychology, indeed?
- ❖ Does scientific – third person – approach necessarily ignore an everyday first person aspect of consciousness? – (Viz., what is like to be conscious)
- ❖ Is it a pseudo problem only?  
(Yes/No – Argue for and against!)



## B. Phenomenology

Consciousness needs to be examined



Consciousness cannot be a pure object (it is not given for our senses)



Consciousness is the condition of possibility of experience (as a space for experience)



Therefore, experience needs to be examined



## B. Phenomenology – General

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- is the study of “phenomena”
  - appearances of things as they appear in our experience
  - studies conscious experience as experienced from the subjective or first person point of view
  - consciousness is not one object among the many but it is the necessary condition of possibility for any entity appear in the experience.
  
- looking for conditions of the possibility of knowledge, or of consciousness generally
  
- Phenomenology ≠ Experimental Psychology by Introspection
  
- seeks through systematic reflection to determine the essential properties and structures of consciousness and conscious experience
  
- Does not attempt to develop a naturalistic explanation of consciousness



## B. Phenomenology – Presumptions

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Pursuing knowledge needs to start with the most obvious form of experience:

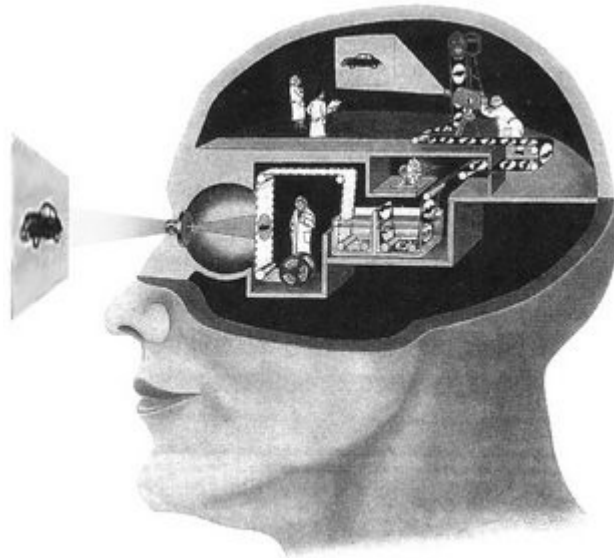
- Cogito
  - It is more natural to construct reality according to conscious experience rather than a naturalistic world view thus,
  - Conscious experience is prior to every other way of pursuing knowledge
- Only experience is certain, thus phenomenologists suspend ontological commitments like whether consciousness is *naturalistic or non-naturalistic*.



## B. What is not Phenomenology

*It is not the case:*

Reality of the object is located 'behind' the apperance



„The ordinary sciences operate on basis of a natural *naivety*. They operate on the basis of a tacit belief in the existence of a mind – experience – and *theory-independent reality*. Reality is assumed to be *out there*, waiting to be *discovered* and investigated. And the aim of science is to acquire a strict and *objectively valid knowledge* about this given realm.” (p. 22)





## B. Phenomenology

- 'How is objectivity constituted?' - as a process that allows for the manifestation or appearance of objects (not fabrication)
- It is false to locate the phenomenal realm within the mind
- Consciousness (and experience) constitute the reality.

*Because*

- The relation between human existence and the world cannot be grasped with the help of concepts 'inner' and 'outer'

“Insofar as, when I reflect on the essence of subjectivity, I find it bound up with that of the body and that of the world, this is because my existence as subjectivity is merely one with my existence as a body and with the existence of the world, and because the subject that I am, when taken concretely, is inseparable from this body and this world. “ (Husserl)

- Analysis is required in order to determine 'real' and the contribution of consciousness to experience



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## B. Phenomenology

McGurk Effect



## B. Phenomenology

Science

Phenomenology aims to give an objective account for consciousness with three steps:

### *I. Epoché*

means we need to suspend our acceptance of the natural attitude in order to avoid commonsensical naïveté.

Husserl proposed, by “bracketing” the question of the existence of the natural world around us.

epoché is a temporary suspension of any external beliefs, placing one’s focus solely on the “raw” experience itself. The goal is to ignore empirical data—along with intuitions and judgments—and simply describe your experience in detail.

(Forget your position as a human being and what it entails! Change your attitude towards reality and not an exclusion of reality! Investigate the world we live in from epoché!)



## B. Phenomenology

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Perception is not reception of information, but it is a result of context dependent interpretation. Each act of consciousness is a consciousness of something, that is, intentional, or directed toward something.

### 1.1. *Intentionality*:

All consciousness is about something ('aboutness')

There is no consciousness without its content.

→

Consciousness is always engaged with thoughts/experience-perception/ideas/moods.

→

It is the state of consciousness.

→

i.e: 'The car is drivable and ***my consciousness exists since*** it is perceived it as such'



## B. Phenomenology

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### 1.2 *Intentional Object*:

The object of consciousness: object is constituted for consciousness by perception, memory, retention and protention, signification (simultaneously)

What perceived always depend on the consciousness and its properties

→

The content of consciousness is neither created by consciousness not derived from the reality. But it is a unique combination of consciousness and reality.

→

The content of consciousness can be never separated from consciousness.

→

I.e: 'The *car is drivable* and it is perceived it as such'



## B. Phenomenology

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### 1.3 *Intentional Experience*:

is never isolated: All perceptual experience is embedded in contexts – *pragmatic, social, cultural* – Perceiver is always situated *in the world* and embodied agent with motivations and purposes

Each experience is always exhibitions of something or interpreted as something  
'The *car* is *drivable* and I perceive it as such'

#### CAR

- vehicle
- motorcycle
- freedom
- expense
- ...

#### DRIVABLE

- govern
- manipulate
- influence
- power
- ...



## B. Phenomenology

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### *II. Phenomenological Reduction*

- aim of the phenomenological reduction is to analyse the correlational interdependence between specific structures of subjectivity and specific modes of appearance or givenness.
- It is not interesting what things are but rather how they appear, and thus as correlates of our experience
- we focus on the subjective side of consciousness – becoming aware of our subjective accomplishments and of the intentionality that is at play.
- it attempts to capture the invariant structures of experience; it seeks to explore its essential structures and conditions of possibility.



## B. Phenomenology

### III. Eidetic Variation

It involves using our imagination to strip away the unessential properties of things.

- If the object that I am examining happens to be a book, what features of it can I imaginatively vary without destroying the fact that it is a book.
- set of properties that resist change constitute the essence, the 'what makes a book a book'.

Same eidetic analysis for cognition.

I.e: If I am remembering the book,  
what can I change about the process of remembering and still have memory;  
what is it that I cannot change and that remains essential to the cognitive activity  
of remembering/attention/producing language/solving problems/decide







## B. Your turn II.

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Form two groups

In a nutshell your job is to:

- Imagine a phenomena
- Bracket or suspend the commitment to the existence of the natural world around us.
  - map how your consciousness relates to the phenomena
  - how your perception, memory, retention and protention, signification are attached to the phenomena.
- Concentrate to your phenomena, its structure that is given (consider it carefully)
- Get rid of unimportant properties of the phenomena

***Phenomena: A perfect date in your past***



## C. Applied Phenomenology

- Memory is a re-enactment of a past perception rather than an imaginary enactment
- Episodic memory involves a belief that at some point in the past one perceived x
- This differentiates it from imagination.

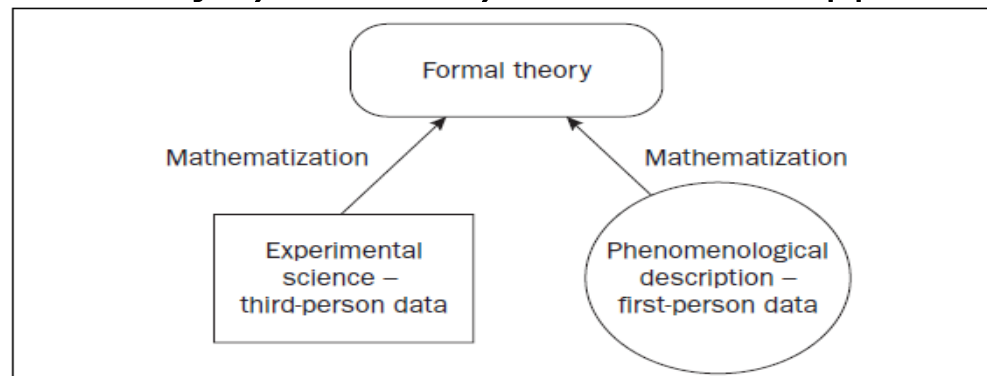


- It is possible that neuroscience could identify phenomenological experience with neurological process and develop a formal notation that would express this model of memory – subpersonal, neuronal level.

How to combine first (phenomenology) and third (mathematical natural scientific) person approach?



The *mathematics of dynamical systems* can be applied to the mind





## C. Applied Phenomenology

During EEG procedure experimental subjects get distracted from the experimental task by own thoughts → *subjective parameters*  $\approx$  noise

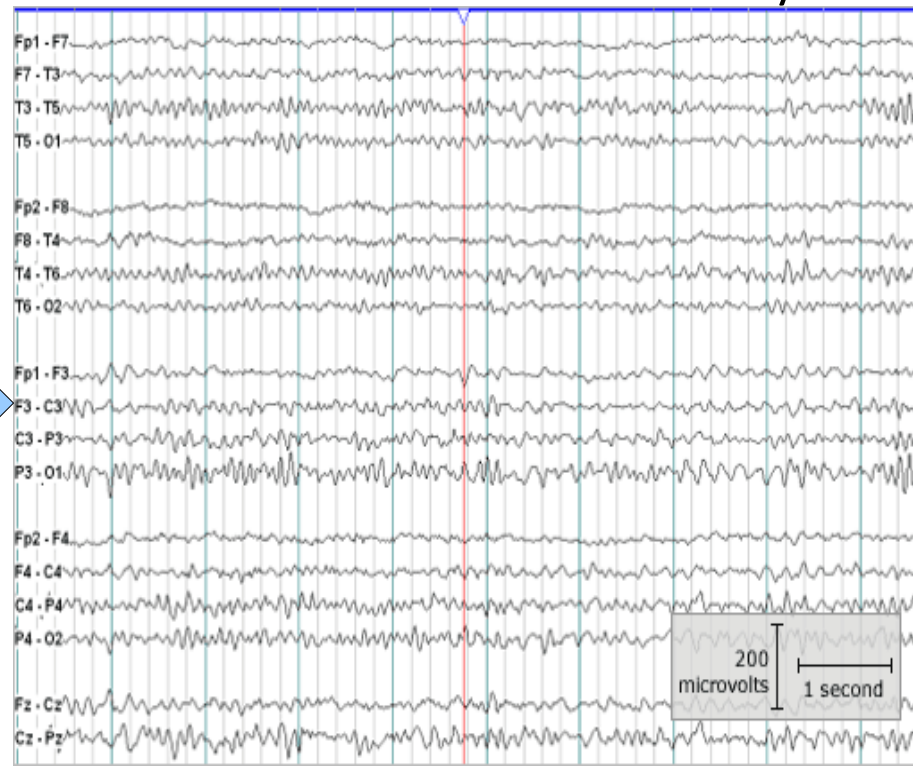
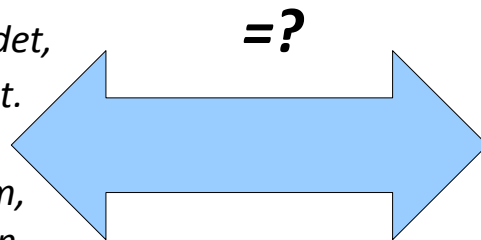
Phenomenologically trained subjects are asked to describe their experience in detail

Reports of subjective parameters are correlated with EEG measures of Brain activity

*Szeretlek, szeretlek, szeretlek,  
egész nap kutatlak, kereslek,  
egész nap sírok a testedért,  
szomorú kedves a kedvesért,  
egész nap csókolom testedet,  
csókolom minden percedet.*

*Minden percedet csókolom,  
nem múlik ízed az ajkamon,  
csókolom a földet, ahol jársz,  
csókolom a percet, mikor vársz,  
messziről kutatlak, kereslek,  
szeretlek, szeretlek, szeretlek.*

(Szabó Lőrinc)





## C. Your turn III.

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### What do you think about the subject matter?

- Does the translation from experience/phenomena to scientific categories involve the loss of essence of consciousness?
- How does it reach your field of research?
- Is it a problem at all?
- Brainstorming: any idea for solving the problem?

**Final**



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**Thank you for your attention!**