

## The Core Imagination - Notes - Bob Clarke, March 2019

### Introduction:

- '**Imagination**' is a very large topic: **Stevenson** (2003) lists 12 concepts of '**Imagination**', each with sub-divisions!<sup>1</sup>
- For '**The Creative Imagination**': see '**Bridging the Gap: Scientific Imagination Meets Aesthetic Imagination**': a conference held at LSE, 5-6 October 2017: <http://www.lse.ac.uk/philosophy/blog/2017/06/12/bridging-the-gap/>
  - This conference at least convinced me that '**Imagination**' was not dated dogma! Scientists and Philosophers still recognise that it is an important and viable concept, not just 'old hat' untenable 'Folk Psychology'!
- '**Creative Imagination**' does not appear to be evenly distributed across the human species: sadly, we cannot all be Plato, Kant or Iris Murdoch; Bach, Mozart or Beethoven; Dante or Shakespeare; Leonardo, Turner, Picasso or Frida Kahlo; Newton, Einstein, Emilie du Châtelet or Emmy Noether ... & some of us are said to '**lack imagination**'!!
- But we will consider here the proposition that the '**Creative Imagination**' (metaphorically) emerges as an 'overflowing' of a **Faculty of Imagination** that we all have, which I've called '**The Core Imagination**'.
- Without it we cannot make any sense of the World at all!
- **Kant** called one aspect of it '**The Productive Imagination**'. What does it produce? *The Very World for us!*

**We consider three aspects of our 'Core Imagination' here:  
(1) The Productive Imagination, (2) "If", (3) Causality.**

### General References:

Mary Warnock, '*Imagination*', (London: Faber and Faber, 1976).

Leslie Stevenson, '*Twelve Conceptions of Imagination*', *British Journal of Aesthetics*, **43** (3), 2003, pp. 238–259.

### 1. The Productive Imagination:

- **Mark Johnson** (of '*Lakoff and Johnson*') describes two opposing '*Traditions*' in '*The Body in the Mind: The Bodily Basis of Meaning, Imagination and Reason*', pp. 139-172, (1987): Ch. 6, '*Toward a Theory of Imagination*':
  - **Platonic** - '*Ban the poets*' they are merely mimetic! Worse !!: *Imagination* distracts us from *Rational* thought: a similar position was taken up by Enlightenment Rationalists (e.g. **Descartes**): we need *facts* not *fancy*!
  - **Aristotelian** - *Imagination relates sensations to thoughts* – it is an essential part of our *Being* in the world: a position taken up by Enlightenment Empiricists: **Hobbes** and **Hume** and also by **Immanuel Kant**:
- In this talk we follow **Aristotle**, the *Empiricists* & **Kant's** '*Critique of Pure Reason*' – '**CPR**':

**Q1:** '*Imagination is the power of presenting an object in intuition even without the object's being present*', '*Einbildungskraft ist das Vermögen, einen Gegenstand auch ohne dessen Gegenwart in der Anschauung vorzustellen*', Kant, **CPR**, B151, Pluhar translation, p. 191. (NB. Kant's emphasis on the word '*Einbildungskraft*')

**NB: Kant (CPR):** Kant's word for '*Imagination*' here was '*Ein-Bildungs-Kraft*': an '*In*' - '*Picturing*' - '*Ability*'.

**Q2:** '*Psychologists have hitherto failed to realize that imagination is a necessary ingredient to perception itself*', Kant **CPR**, A120, *ftnt A*, as translated in P F Strawson (1970), p. 31.

**Q3:** '*... every appearance contains a manifold ... Hence there is in us a power to synthesize this manifold. This power we call the Imagination ...*', Kant **CPR**, A120, Pluhar translation, pp. 167-8.

- Kant says that we use the same Faculty of Imagination for *Perceiving*, *Memorising* and *Imagining* the world.

**But is this correct?  
What does Today's Science tell us?**

### (1) An Argument from Embodied Frugality:

Once an organism has developed a faculty for creating images for *perception*, why should it generate another for *memory* or *imagining*? Modern sciences show that organisms are frugal and re-use resources. *Economy* has survival value – e.g. as demonstrated by *Epigenetics*: our cells exploit their DNA in many different ways! – also: we don't change our *physical method* of breathing when we switch from breathing unconsciously to breathing consciously!

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<sup>1</sup> **Important Note:** when we speak of '*Imagination*', we tend to use visual metaphor – but none of the authors mentioned here intend to restrict *Imagination* only to the visual: all of the senses, and our conceptual intellect, are involved.

## (2) An Argument from Neurological Science:

- Neil Burgess (FRS - 2017) and his team at *The Institute of Cognitive Neuroscience and Institute of Neurology*, University College London (UCL) have made important contributions to understanding Spatial Cognition and its relationship to Memory and Imagination. See: Neil Burgess, 'A Spatial Model for Cognitive Neuroscience', *Neuron*, **84**, No. 6, 17 Dec 2014, pp. 1120-1125. Recent studies at UCL based on fMRI and simulated neuron-based 'brains' have investigated Grid Cells: See Horner, Bisby, Zotow, Bush & Burgess, (2016) & Wiki:

**Q4:** 'A grid cell is a type of neuron in the brains of many species that allows them to understand their position in space'. This is explained in non-technical terms by Mo Costandi in *The Guardian*, 10<sup>th</sup> March 2016:

**Q5:** 'New research suggests that neurons [Grid Cells] which track our movements are also involved in imaginary navigation ... the researchers observed a signal that is consistent with grid cell-like activity in the entorhinal cortex during the navigational task, but they also observed the same or a very similar signal during periods when the participants merely imagined navigating through the environment to retrieve [what] they had seen earlier. This suggests that grid cells not only track our movements during spatial navigation, but also contribute to path planning, perhaps by moving the viewpoint of the imagined environment'.

- Andrej Bicanski works with Burgess at UCL. His conference talk at LSE, 2017 was: "'Where have I been and where should I go?" – ... [a] Perspective on Spatial Memory and Imagery'. He demonstrated that computer-simulated neurons can replicate imaginary positions in space, using the same neurons and methods as used in the original perceptions. At least, in a simulation, perception and memory and imagination use the same cognitive resources.

**Q6:** Gregory Berns: 'Perception and imagination are linked because the brain uses the same neural circuits for both functions', see <https://www.fastcompany.com/3026510/the-neuroscience-of-imagination>

## (3) An Argument from Cognitive Science: Kantian 'Schemata' and 'Image Schemas'

- Kant, CPR: 'The Schematism of the Pure Concepts of Understanding'. A137 – A147, B176 - B187: **Very Obscure!!**
- But Schemata were taken up by Mark Johnson (1987) (and 'Lakoff and Johnson') who makes sense of them:

**Q7:** Johnson: p. 24: 'Kant understood schemata as structures of imagination that connect concepts with percepts ... "procedures for constructing images" and as thus involving perceptual patterns in our bodily experience'; p. 153: '... imagination is a schematizing activity for ordering representations in time ...', [NB: my underlinings].

- From these concepts & from the perspectives of **Embodied Cognition**, Johnson developed the important concept of "**Image Schemas**": Johnson (1987), Ch 4, pp. 65-100. See also Lakoff & Johnson (1980 & 1999).

**Q8:** 'Image schemas are pre-conceptual and primitive patterns based in sensory perception and embodied experience that enable and constrain conceptualization and reasoning', Johnson (1987), p. 30.

**Q9:** 'Mark Johnson writes in *The Body in the Mind* that we "connect up" [p. 152] abstract mental structures with the contents of our sense perception using what he calls "schemata," which are "non-propositional structures of imagination"', Stuart (2014), p. 25. They are '... repeated patterns of experience', Miall (1997), p. 192.

- Studies on Infants: Image Schemas are developed by infants through bodily exploration - implying that:
- Image Schemas are more fundamental than Kantian Categories, which are Conceptual & so for mature human beings only. One cannot even articulate the concept of "concept" unless one is verbally articulate!
- Examples of Image Schemas, see Johnson (1987): p. 114: PATH, LINK, CYCLE, SCALE, CENTER-PERIPHERY; p.126: SURFACE, OBJECT, CONTACT. [NB. Image Schemas are conventionally represented by SMALL CAPITAL font].
- **Even I** (in advanced age!) do not ride my bike (with tolerable success!) via concepts, but by using schemata, i.e. through learnt bodily experience! Understanding the world dynamically starts with a feat of the Imagination!
- Image Schemas appear to be an ongoing feature of Embodied Cognitive Science studies: see, e.g. Mandle & Pagán Cánovas, 'On Defining Image Schemas', (2014).

**Plausible Scientific and Philosophical Position:** The Empiricists and Kant were largely correct:

- We (via our 'Understanding') impose our order on the world, **but**, initially with infants, this is via the Schemata of the Imagination, rather than the (Conceptual) Categories. Concepts and Categories arrive with maturity.

Today's cognitive scientists of the Embodied Mind are saying that Schemata of the Imagination ('Image Schemas') precede Concepts in human development – the latter only arise after we acquire language.

### 'Productive Imagination' References:

Immanuel Kant, *'The Critique of Pure Reason' (CPR)*, many editions – most quotes here from CPR translated by Werner S Pluhar, (Indianapolis: Hackett, 1996) see also the Norman Kemp Smith, (1929), & Cambridge (1999) editions.

Andrej Bicanski, LSE Talk, 5-6 October 2017 (UCL): *"Where have I been and where should I go?" – A Computational Modeler's Perspective on Spatial Memory and Imagery*": <http://www.ucl.ac.uk/icn/people/space-andmemory/space-accordion/andrej-bicanski>

Horner, Bisby, Zotow, Bush & Burgess, *'Grid-like Processing of Imagined Navigation'*, 2016, *Current Biology*, **26**, pp 842–847.

Paul Fletcher, Gresham College Lecture, Feb 2019, <https://www.gresham.ac.uk/lectures-and-events/inhabiting-different-reality>

Mark Johnson, *'The Body in the Mind: The Bodily Basis of Meaning, Imagination and Reason'*, (University of Chicago Press, 1987).

George Lakoff and Mark Johnson, *'Metaphors We Live By'*, (University of Chicago Press, 1980, reprinted 2003), and *'Philosophy in the Flesh'*, (New York: Basic Books, 1999).

Jean M. Mandle and Cristóbal Pagán Cánovas, *'On Defining Image Schemas'*, *Language and Cognition*, 0 (2014), pp. 1 – 23

David S Miall, *'The Body in Literature: Mark Johnson, Metaphor, and Feeling'*, *Journal of Literary Semantics*, **26** (3), pp. 191-210.

P F Strawson, *'Imagination and Perception'*, (1970) in *'Experience & Theory'*, L. Foster and J. W. Swanson (eds.), Amherst, MA: University of Massachusetts Press, pp. 31–54.

Michael T Stuart, *'Imagination: A sine qua non of science'*, *Croatian J. Philos*, **17**, (49) pp. 9-32, 2014.

## 2. **"If"**: The Role of **"If"** in language is to **Import** our **Imagination!**

- The most important words in English are short monosyllables: *the, a, is, I, you, we, and, but, ... "If", ...*

### **"If" in Scenario Choice:**

- Planning for the Future – that has *survival value!* e.g. *'If I were do this, what are the likely consequences?'*
- But, also: **"If only"** introduces our reflections on the past, either regretfully or constructively: so as to learn from trial and error. Our past mistakes, imaginatively, lead to the positing of other options for our future.

### **"If" in Grammar: Modality: Possibility and Necessity**

- The *Indicative, Interrogative, Imperative, Subjunctive Grammatical Moods* - the latter deals with Possibilities.
- **Modal verbal forms:** *may, might, could, would, should*, etc, relate to possibilities: Imagination! So does **"If"**.
- **"If"** invites the use of the Subjunctive: *'If I were to do this ... '*, here *'were'* is Subjunctive.
- See Wiki on **'Realis'** (e.g. *Indicative*) and **'Irrealis'** (e.g. *Subjunctive*) **moods** in our language.

### **"If" in Philosophy: Counterfactuals:**

- *Factual* vs. *Counterfactual* worlds are respectively captured by Realis vs. Irrealis Grammatical Moods.
- We imagine counter-factual situations: e.g. *'If the sun were out, I would take a walk'*. But it's actually raining!!
- **Counterfactuals** (CFs) are amazingly important for our very being in the world! See **Ruth Byrne's** papers, e.g:

**Q10:** *'People spontaneously create counterfactual alternatives to reality when they think "if only" or "what if" and imagine how the past could have been different. ... The loss of the ability to imagine alternatives as a result of injuries to the prefrontal cortex is devastating'*, Byrne, 2016, *Abstract*, p. 135.

### **The Most Important Point:**

- Our **Bodies** must live in **Factual Space**, *Physical Space, Natural Space, 'Real' Space ...* - call it what you will! They have *no choice*, they are *constrained* - their *Natural* and only Habitat is the *'Real' World ...*
- ... but our **Minds** range over many much-broader imaginary spaces: their Natural Habitat! Their Terrain encompasses many **Counterfactual Worlds** – *'Might-Be's', 'Might-Have-Beens'*: our minds are there Most of the Time. They *thrive* there! They are freer than our bodies! They *rove the plains* of *Possibility*, of *Projects & Plans ...*
- Even physicists formally posit Imaginary 'Phase Spaces' (q.v.) – Spaces of Possibility - which are infinitely large, but which enable our human minds to understand the world all the more effectively.

### **"If" References:**

Ruth M.J. Byrne, *'Counterfactual Thought'*, *Ann. Rev. Psychol.* **67**, pp 135–57, 2016.

Ruth M. J. Byrne, *'Précis of The Rational Imagination: How People Create Alternatives to Reality'*, *Behavioral and Brain Sciences*, **30**, pp 439–480, 2007.

Sarah R. Beck and Kevin J. Riggs, *'Counterfactuals and Reality'*, and Caren M. Walker and Alison Gopnik, *'Causality and Imagination'*, both in *The Oxford Handbook of the Development of Imagination*, edited by Marjorie Taylor (Oxford, 2013).

### 3. **Causality** – *It is central to our Way-of-Being in the World!* Even Causality requires ‘*The Imagination*’:

We are concerned here with ‘Cause and Effect’ (Aristotle’s ‘*Efficient Causality*’).

- If we claim that ‘**A caused B**’, we claim that ‘**B would not have happened if A had not happened**’ - (paraphrase).
  - Or, at least, that ‘**B would not have happened in the way that it did if A had not happened**’. Example:
- ‘*The car crashed into the lamp-post because the driver was drunk*’ - **implies**:
  - ‘*The car would not have crashed into the lamp-post if the driver were not drunk*’ (note use of *Subjunctive*):
- We are *once again* positing **Counterfactuals!** So: we are using our **Imagination!** (Either *explicitly* or *implicitly*).
- So ... the reason why **Hume** cannot find a ‘*Necessary Causal Connection*’ in the Natural (Factual) World ...  
... and why **Kant** asserted that *Efficient Causation* is a ‘*Category*’ that **we impose** upon our phenomenal world ...  
... is arguably that Causes do not reside in ‘this’ *Factual, Natural, Physical World* ...  
... they reside in a **Relationship** between the **Factual World** and our **Imaginary Counterfactual** worlds:
  - On this account **Causes are manufactured by our Faculty of Imagination** - they are *inalienably Imaginary*.
- We may add that ‘Causes’ are a very *humanly-biased* way of accounting for what happens in the world!
  - A number of examples can be offered to this effect!
- **Note:** that this ‘**Counterfactual Theory of Causality**’ is widely used by medical scientists & statisticians – it is not just a ‘*philosophical*’ concept - see **David Lewis** (1973 & 2000) and **Judea Pearl** (2018), his papers and his website.
  - **Judea Pearl** argues that *Statisticians* and *Epidemiologists* have a much better understanding of ‘Cause’ than do *Philosophers & Scientists*: they absolutely **have to** in order to be effective in their jobs!
- **It gets complicated!!** e.g. (1) What are the ‘**Truth Conditions**’ for Counterfactuals? (2) **Surely**, philosophy aside, there **really are** ‘**Causes**’ in the World?: e.g. *Drunkenness, Disease Vectors, etc.*
- **Russell** once argued that scientists **do not use** the concept of ‘**Cause**’! He had to recant, because scientists, (being ordinary human beings!) speak of ‘causes’ *all of the time*, arguably only **informally**. Certainly, in more **formal** approaches **physicists** explain events in the world via **Principles**: ‘*Natural Laws*’, ‘*Conservation Principles*’ (e.g. of *Energy* or *Momentum*), or via concepts like ‘*The Principle of Least Action*’:- ‘**Causes**’ can be dispensed with!
- **But** our **Minds** normally **relate to the World via the Imagination**: it is *endemic* to our **Concept** of Causality.

#### **Causality References:**

David Lewis, ‘*Causation*’, *Journal of Philosophy* **70**, (17) pp. 556-567, 1973.

David Lewis, ‘*Causation as Influence*’, *Journal of Philosophy*, **97**, (4) pp. 182-197, 2000.

Judea Pearl & Dana Mackenzie, ‘*The Book of Why - The New Science of Cause and Effect*’, (Allen Lane, 2018).

Judea Pearl website: [http://bayes.cs.ucla.edu/jp\\_home.html](http://bayes.cs.ucla.edu/jp_home.html). *The Art and Science of Cause and Effect*, *Reasoning with Cause and Effect*

Judea Pearl, ‘*Causal inference in statistics: An overview*’, *Statistics Surveys*, **3** (2009) 96–146, DOI: 10.1214/09-SS057 ,

M Höfler, ‘*Causal inference based on counterfactuals*’, *BMC Medical Research Methodology* 2005, **5**:28 doi:10.1186/1471-2288-5-28

**Also:** Ruth Byrne and Caren M. Walker & Alison Gopnik (*Oxford Handbook of the Development of Imagination*): refs above.

#### **Summary: The Relationship between the ‘Core’ and the ‘Creative’ Imaginations:**

- Even *before* we can express our *Creativity* through *Fiction, Fantasy, Art, Science, etc.*, ... our *Imagination* is employed by us **routinely** - to make possible **our Very Being in the World – just for our getting by from day to day!**

**Without Imagination: Nothing!**

- But I’ve just skimmed the surface here, there is much more to say - e.g. the importance of **make-believe** for children, of **story-telling** in our education, etc. They remind us that the *Creative Imagination* is **also part of our make-up** as human beings (*though, perhaps to an extent that varies from one person to another*).
- How does ‘*The Creative Imagination*’ relate to ‘*The Core Imagination*’? **Metaphorically** ... it is the ‘**Froth on the Beer**’ of the *Core Imagination* ... a foaming overflowing of that **same faculty** that is so essential for our daily lives!

**Arguably:**

**The Core Imagination makes our Life Possible,  
but it is The Creative Imagination that makes our Life Worth Living**