

Originally, the following text was part of a projector presentation. For easier readability, the slide transitions were removed, and it was rendered into PDF/A. A better version in can be accessed under: [http://durt.info/2011Summer/2011\\_Christoph\\_Durt%27s\\_DGPhil\\_presentation.html](http://durt.info/2011Summer/2011_Christoph_Durt%27s_DGPhil_presentation.html)

## DGPhil congress 2011: *The World of Reasons*

1. reasons necessitate a common background, and our picture of the world is an important part of it
2. reflection on the logical and historical origin of our picture of the world can contribute to elucidate the structure of a number of philosophical forms of reasoning
3. one important line of thought in modern philosophy pretends that the philosopher can abstract from such presuppositions

"[...] for all opinions I had held until then, I thought that I could not do better than resolve at once to sweep them wholly away [...]"  
(Descartes, *Discours de la Méthode*, Partie II. All translations are mine unless otherwise noted.)

"I will now close my eyes, I will stop my ears, I will turn away my senses from their objects [...] thus, holding converse only with myself, and closely examining my nature, I will endeavor to obtain by degrees a more intimate and familiar knowledge of myself."

(Descartes, *Meditatio III*, 1, translated by John Veitch)

4. university teaching today usually buys into the story of a new start by Descartes, in particular with respect to "modern" philosophical problems; if not explicitly then practically (e.g. in explaining problems in philosophy of mind, subjectivity, the external world)

### **This presentation tries to show:**

1. a central modification of modern philosophy concerns the structure of the world itself; "Galileo's mathematization of nature" (Husserl) breaks with Scholastic philosophy, and it is presupposed by modern philosophers such as Descartes and Locke
2. the mathematization of nature stands behind important "modern" forms of reasoning, such as the distinction between "primary" and "secondary" qualities, and connected problems (e.g. consciousness, the perceiver, subjectivity)

### **A curious form of reasoning**

"I think that if ears, tongues, and noses were removed, shapes and numbers and motions would remain, but not odors or tastes or sounds. I believe that outside of the living being the latter are no more than names, just as tickling and titillation are nothing but names if we removed the armpits and the skin inside the nose."

(Galileo *Il Saggiatore* [1623])

"[...] we first exclude hardness, since if the stone is melted or pulverized in its most minute parts it loses its hardness without thereby ceasing to be a body; next we exclude color, since we have often seen stones so transparent as to lack color; next we exclude heaviness, since although fire is extremely light it is still thought of as being corporeal; and finally we exclude cold and heat and all other such qualities, either because they are not thought of as being in the stone, or because if they change, the stone is not therefore considered as having lost its bodily nature. We thus see that nothing remains in the idea of the stone except that what is extended in length, breadth and depth."

(Descartes *Principia Philosophiæ* [1644], II, 11)

"Take away the sensation of them; let not the eyes see light or colours, nor the ears hear sounds; let the palate not taste, nor the nose smell; and all colours, tastes, odours, and sounds, as they are such particular ideas, vanish and cease, and are reduced to their causes, i.e. bulk, figure, and motion of parts."  
(Locke *Essay* [1689], II, viii, 18)

## Galileo Galilei (1623) *The Assayer*

"Philosophy is written in this grand book that is continually open before our eyes (I mean the universe), but it cannot be understood unless one first learns to understand the language and knows the characters in which it is written. It is written in mathematical language, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a word of it; without these, one is wandering around in vain in a dark labyrinth."  
(Galileo *Il Saggiatore* [1623],

[http://www.liberliber.it/mediateca/libri/g/galilei/il\\_saggiatore/html/06.htm](http://www.liberliber.it/mediateca/libri/g/galilei/il_saggiatore/html/06.htm))



Qualities that are really part of the objects they are attributed to

Galileo:

- extension
- location

- mass
- motion
- shape
- size
- penetration
- touch
- number
- →directly mathematizable (technique of mapping as if measurements were taken in ideal space)
- Galileo's notion radicalized by Descartes:

"The nature of body consists not in weight, hardness, color, or the like, but in extension alone."

(Descartes *Principia Philosophiæ* [1644], II, §4)

## Qualities that are not really part of the objects they are attributed to

Galileo:

- colors
- tastes
- odors
- sounds
- heat
- tickling/titillation
- →not directly mathematizable
- "must" be indirectly mathematizable (via "primary" qualities – and in relation to a "standard" observer)

## The "Corpo Sensitivo" and the problem of the observer

- corpo sensitivo, corpo animato, corpo animato e sensitivo
- l'animale, l'animal vivente
- l'anima sensitiva

"[...] I think that tastes, odors, colors, and so on are no more than mere names so far as the object in which we place them is concerned, and that they reside only in the consciousness. Hence if the living creature were removed, all these qualities would be wiped away and annihilated. But since we have imposed upon them special names, distinct from those of the other and real qualities mentioned previously, we wish to believe that they really exist as actually different from those."

(translation by: Stillman Drake *Discoveries and Opinions of Galileo* (1957), 274)

"[...] vo io pensando che questi sapori, odori, colori, etc., per la parte del soggetto nel quale ci par che riseggano, non sieno altro che puri nomi, ma tengano solamente lor residenza nel corpo sensitivo, sì che rimosso l'animale, sieno levate ed annichilate tutte queste qualità; tuttavolta però che noi, sì come gli abbiamo imposti nomi particolari e differenti da quelli de gli altri primi e reali accidenti, volessimo credere ch'esse ancora fossero veramente e realmente da quelli diverse."

(Galilei *Il Saggiatore* [1623], [http://it.wikisource.org/wiki/Il\\_Saggiatore](http://it.wikisource.org/wiki/Il_Saggiatore), chapter 48)

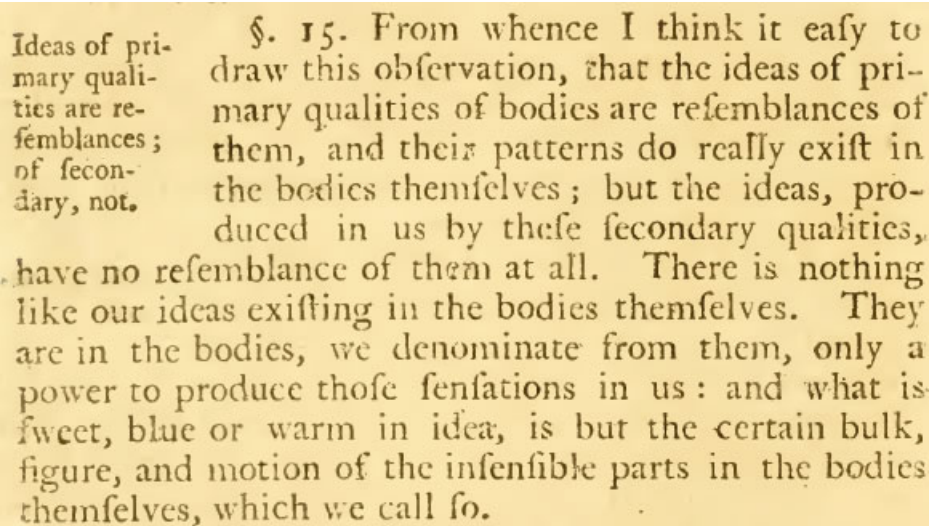
"[...] I think that tastes, odors, colors, and so on, on part of the subject in which they appear to reside, are no more than mere names, but that they hold their residency only in the sensitive body. Hence, if the animal were removed, all these qualities would be wiped away and annihilated. Nevertheless, as soon as we in this way have imposed names on them, particular and different from those of the other primary and real accidents, we want to believe that they also exist just as truly and really as the latter."

(less misleading translation)

### **The problem of the status of merely apparent qualities – Error Theory, Dispositionalism**

"[...] pain and color and so on are clearly and distinctly perceived when they are regarded merely as sensations or thoughts. But when they are judged to be real things existing outside our mind, there is no way of understanding what sort of things they are."

(Descartes *Principia Philosophiæ*, [1644], I, 68)



Ideas of primary qualities are resemblances; of secondary, not.

§. 15. From whence I think it easy to draw this observation, that the ideas of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves; but the ideas, produced in us by these secondary qualities, have no resemblance of them at all. There is nothing like our ideas existing in the bodies themselves. They are in the bodies, we denominate from them, only a power to produce those sensations in us: and what is sweet, blue or warm in idea, is but the certain bulk, figure, and motion of the insensible parts in the bodies themselves, which we call so.

(Locke *Essay* [1690], II, viii, 15)