

## 23. How important are material tools in the production or acquisition of knowledge?

### Object 1: MRI- Scanner (Siemens)



My first object is an MRI-Scanner (Magnetic Resonance Imaging) by Siemens. It is used in diagnostic medicine or for research in fields such as neuroscience or psychology. Siemens is an old technology giant based in Erlangen, not far from where I live, with a medicine department producing these incredibly powerful scanners. The technology of the scanners has already been there for many years. Using this tool enables researchers to safely investigate the brain by making the invisible and

inaccessible organ of the human body visible to the human eye without harming the studied person. This material tool has been used in countless research, ultimately changing the boundaries of possible research on the human body. The propositional knowledge of the structure of the brain is one benefit. But this tool gives us also chance to refine further and create even more knowledge, therefore making it a crucial part of the acquisition of knowledge. It gives us a structural map of the brain, but it also gives engineers experience in that material tool from which newer versatile devices such as the F-MRI scanner have been developed. This shows how a material tool can change the spectrum of knowledge with broad bound positive effects. Although such a scanner can result in accessing knowledge previously only being imagined, it has limits. Without a particular knower such as the researcher or engineer using the machine, it is useless. Therefore it is crucial to consider that much is gained from a material tool as long as it can be operated properly.

### Object 2: War- Photo



As my second object, I chose this photo taken by my great-grandfather. It was taken during the Third Reich's campaign against the Soviet Union. It was shot along the frontlines, and it does not depict himself.

On a superficial level, photos are a material tool used to store visual information. This information can take many different shapes and forms. This means we can acquire some form of knowledge from photographs. This will range from knower to knower, whether someone admires the composition or if the photo is used

as primary research or evidence by historians to acquire more propositional knowledge about conditions during the second world war. It also affects its significance as a tool to acquire said knowledge. The photosensitive film upon which this image has been exposed is also an essential tool for acquiring knowledge. The photographer's expertise is effectively using this tool to store the information, using it as a vessel of his art or storage of events, making the conditions the knowledge that can be acquired after the production of a photograph.

Furthermore, this is impossible by hand and requires specialised equipment like a camera. Once again the camera and the film, in the extended sense, produce knowledge included in object 2. However, visual information will not always give one the knowledge of the events captured.

Photos are commonly used as a way to start discussions. Many pictures need no explanation to express something. However, Oral transmission has been a mode of transmitting knowledge and beliefs for hundreds of centuries. This mode can aid in understanding the context and reason for the photo taken better. The beliefs and values of the photographer can not really be transferred by the photo.

These are kept within the knowledge pool of the creator. This can not just be acquired by analysing the photo. The specific background knowledge of this photo I have acquired by talking about the war photo with my family for example.

This shows that material tools might cause the acquisition of different knowledge, depending on who is interpreting it. But there are limits to what extent a material tool can transmit or contain knowledge. That might already be stored within a particular community of knowers.

### **Object 3: Trevor James Alto-Saxophone**

Photo taken by author



As a final object, I am using the rented saxophone that I am currently learning on.

Where the use of an instrument is concerned, knowledge is procedural. Using the saxophone as a material tool the procedural knowledge how to play the instrument then will produce more knowledge.

Firstly, in cooperation with adequate sheet music, the saxophone is a material tool to acquire the skill set of different 'licks', fingering techniques, and other aspects of creating sounds. Knowing how to play different notes at different speeds or which embouchure to use is a crucial part of this learning process. More and more challenging compositions are introduced using other sheet music. To master them, one has to practice often and frequently. In this case of procedural knowledge, the tool to acquire this

skill set is the saxophone. However, after mastering the art of music on an instrument, such as the saxophone, knowledge can be created using the previously acquired procedural knowledge. After understanding the subtle nuances in playing style, one can manipulate one's tone to convey emotion. As the saxophone is said to be the closest instrument to the human voice, this emotional knowledge can be experienced vividly during a performance by those who have acquired this ear. In fact, improvisation is an essential part of the discipline of playing the saxophone. Miles Davis, an Afro-american jazz trumpeter, for instance is a master sharing this trait conveying different feelings behind his albums often recorded on the spot without rehearsal. Instruments, in general, have been used to share a state of mind, therefore, making the saxophone an important material tool. It helps musicians acquire the craft of playing the saxophone and gives them a tool as a means to share their feelings and emotional knowledge with the world. So a material tool can communicate abstract human emotions.

928 Words

References:

Object 1:

<https://www.siemens-healthineers.com/magnetic-resonance-imaging/0-35-to-1-5t-mri-scanner>,  
accessed on 25.05.2022

Object 2:

Photograph from author's family's private collection

Object 3:

Photograph from author's private collection