# Jerzy Skolimowski and Bunge-Wand-Webber Ontology- BWW Technology and Science Definition

Technology is the use of scientific knowledge for practical purposes or applications, whether in industry or in our everyday lives. So, basically, whenever we use our scientific knowledge to achieve some specific purpose we are using technology. Well, there is slightly more to it than that. Technology usually involves a specific piece of equipment. But that equipment can be incredibly simple or dazzlingly complex. It can be anything from the discovery of the wheel, all the way up to computers and MP3 players.

According to Skolimowski, “Science concerns itself with what is, whereas technology concerns itself with what is to be” – Jerzy Skolimowski, 1966

He further States that Technology isn’t science.-Science aims at increasing knowledge through devising better theories -While technology aims at creating new artifacts through devising means of increasing effectiveness. In technology we try to make “better” objects of the same kind,” Better” means improving characteristics of the object such that it is more: durable, reliable, sensitive, faster, or some combo of it all.

It may be clear by this point that technology is deeply entangled in human will and judgment. Technology is certainly not value-neutral, although it is often portrayed as such. Part of the reason is our messy collective handling of the relationship between technology and science. Science and technology are frequently mentioned in one breath; while they are related, we must decouple the two to fully understand what technology is, apart from science.

A scientist Is a spectator whose goal, at least in theory, is to detach their identity from the scientific process. The person’s will is constrained to looking for truths that are universal, certain and timeless. The scientific method is constructed to rid its output of human context and distortion, so that in theory, anyone should be able to replicate a set of results. The scientist’s identity should be rendered irrelevant.

In a sense, science aims to be a minimally instrumental pursuit, as it only aims at the truth. In contrast, technology is highly instrumental; it’s all about pursuing various goals using tools.

Consequently, in its idealized form the scientific method limits freedom of the will, while technology amplifies freedom of the will. Technology is by no means derived with certainty. It is the extremely particular result of someone’s will, based on rationalizing through the concrete and contingent circumstances of the world.

The Bunge-Wand-Weber is a TLO with low ontological commitment. It is intended to support all applications of information systems.

Bunge’s ontology is concerned with representing the material world – the world of material objects that possess physical properties existing independently from human perception. It has no place for human intentions, interpretations, creations, or meaning. It is unconcerned about institutional reality – the world of conceptual objects and attributes created by human intentions and for human purposes. Examples of such conceptual objects are corporations, government agencies, money, educational institutions, contracts, and transactions.

Based on Mario Bunges; Technology is applied science.- Tech is more about action, but action heavily underpinned by theory.- According to Bunge, theories in technology comes in two types: Substantive theories which provide knowledge about the object of action, and operative theories, which are concerned with action itself.- The design process, structured process leading towards production of a tech thing forms the core of the practice of tech.- Scientific knowledge: knowledge about the behavior of components and the materials they are composed of in specific circumstances.

According to Skolimowski Science’s focus is the increase in knowledge; the investigation of the current reality. It is focused on discovering the secrets of nature. It is about what is.

Technology’s focus is the creation of reality with our own specifications. It is focused on building new objects or improving current objects. It is about what is to be.

The two ideas about the differences between science and technology: one by Skolimowski (in his classical article: “The Structure of Thinking in Technology”) and the other by Mario Bunge (in Maarten Franssen’s article “Philosophy of Technology”).

Main Arguments Skolimowski: Technology is not applied science but dependent on each other. Franssen: Technology is applied science and can be separated based on two theories. Differentiation Skolimowski: human’s interaction with nature different philosophical foundations of science and technology Differs in progress (scientific progress vs technological progress) Scientific progress is about increasing our own knowledge about nature and creating better theories from the ones that we already have Technological progress is about creating better objects that are more durable, sensitivity (accuracy), cheaper to make, and overall more efficient. Go into depth about scientific progress and technological progress Franssen: Technology is about action, but an action heavily underpinned by theory Theories in technology come in two types: Substantive theories: provide knowledge about the object of action Largely applications of scientific theories (science theory → technology pops out) Operative theories: concerned with action itself Not preceded by scientific theories but born in applied research itself (science research → technology pops out) Differs in design process: structured process leading toward that goal; forms the core of the practice of technology (based on scientific knowledge)