HERO AND VILLAIN: DOUBLE EDGE OF TECHNOLOGICAL INNOVATION

Introductory to Social Science and Culture

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- Technological Determinism
- Friedman's The world is flat
- The Social Construction of Technology
- Change the World or Destroy the World

TECHNOLOGICAL DETERMINISM

- What is the determinant:
  - Technology changes the ways human lives; or
  - The ways human lives inspire technological innovation?
- Technological Determinism:
  - presumes that technological innovation drives the development of the social structure and cultural values of the society as a whole.

TECHNOLOGICAL DETERMINISM

- Two premises:
  - The development of technology itself follows a predictable, traceable path largely beyond cultural or political influence; and
  - Technology in turn has "effects" on societies that are inherent, rather than socially conditioned or produced because that society organizes itself to support and further develop a technology once it has been introduced
- TD states: Technology, or technological advances, as the central causal element in processes of social change. As a technology is stabilized, its design tends to dictate users' behaviors, consequently diminishing human agency.

TECHNOLOGICAL DETERMINISM

- Key Arguments:
  - Technology determines history;
  - Technology as a key governing force in society;
  - Technological development determines social change;
  - Social progress is driven by technological innovation, which in turn follows an inevitable course;
  - Doctrine of progress: that social problems can be solved by technological advancement, and this is the way that society moves forward;
  - You can't stop progress, implying that we are unable to control technology.

FRIEDMAN'S THE WORLD IS FLAT

- ***The World Is Round: A Brief History of the Twenty-First Century***
- Analysing the effects of globalization around the world particularly on the ways people interacts, do commerce, political negotiation and so forth.
- He viewed the penetration of the Internet has a flattening impacts on the ways people around the globe do interact and particularly do business.

THE WORLD IS FLAT

- He described three changes:
  - Globalisation 1.0: countries and governments were the main protagonist;
  - Globalisation 2.0: multinational companies led the way in driving global integration;
  - Globalisation 3.0: more small parts or even individual can play a part.
- He suggests that business actors (and everybody) in the world to shift their understanding on the ways the current world system is changing.

THE SOCIAL CONSTRUCTION OF TECHNOLOGY

- SCOT:
  - Technology does not determine human action, but that rather, human action shapes technology.
  - The ways a technology is used cannot be understood without understanding how that technology is embedded in its social context.
- SCOT: We must accept or reject the application of technology on the basis on a careful examination of its benefits, impact including side-effect on the whole element of the society.

SCOT: CORE UNDERSTANDING

- Core understanding:
  - Technological innovation is an effort made by human to solve their problems;
  - There exist of course either succeed or failed technological innovation;
  - Importantly, many technological innovations are used for something that they intended to do even contrast difference, such their side-effect;
  - People should be aware of those possible or un-intended/ unpredicted result from the application of technology.

SCOT: CORE CONCEPTS (1)

- **Interpretative Flexibility**
  - means that each technological artifact has different meanings and interpretations for various groups.
  - Technological design is an open process that can produce different outcomes depending on the different social circumstances of development in such a society.
  - Ext: the invention of nuclear technology that can be used for generating energy (electricity) or for creating nuke (atomic bomb).

SCOT: CORE CONCEPTS (2)

- **Relevant Social Group**
  - They are the *users* and the *producers* of the technological artifact; or neither user and producer.
  - All of them have different understanding, questions, acceptances or even rejections and idle position of technological innovations.
  - The technological innovation and development work to achieve such a consensus in which if satisfied the need of the relevant group.
  - Design ceases not because the artifact works in some objective sense but because the set of relevant social groups accepts that it works for them.
  - Ext: The dead of PC replaced by smartphone and tablet.

SCOT: CORE CONCEPT (2)

- **Closure and Stabilisation**
  - **Rhetorical Closure**: When social groups *see* the problem as being solved, the need for alternative designs diminishes. This is often the result of advertising.
  - **Redefinition of the Problem**: A design standing in the focus of conflicts can be stabilized by inventing a new *problem*, which is solved by this very design.
- Closure is not permanent. New social groups may form and reintroduce interpretative flexibility, causing a new round of debate or conflict about a technology (Ext: the fate of Nokia mobile phone).

SCOT: CORE CONCEPT (4)

- **The Wider Context**
  - The wider sociocultural and political milieu in which artifacts of technological innovation and development takes place;
  - The wider sociocultural and political milieu in which artifacts of technological innovations and development are used for certain purposes.
- Cultural Lag: A social problem caused by partial use/adoption of material/non-material cultures from other society.

CHANGE THE WORLD OR DESTROY THE WORLD

- Technological Innovations: **creative *and* destructive**
- Creative: it provides new ways to solve problem.
  - The Internet: email, e-commerce etc.
- Destructive: It replaces old ways with new one
  - The Internet: replace postal system, shop etc.
- Technology might stimulate or be inspired by Social Change.
- Question on the ability of humans to adapt?