

TD 638: Development Perspectives

Development: Looking from a Conceptual Lens

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Modern Science and Technology: Position Mainstream Development Model

Modern-Western Science and Technology: Mainstream Position . . 1

- The **Modern-Western Science** (henceforth referred to only as **science**)
 - is *defined as* the (claimed) **knowledge** about the **reality** surrounding (including **nature**) and within *human beings*.
- **Modern-Western Technology** (henceforth referred to only as the **technology**):
 - is *seen as* the *way to utilize* this **knowledge** in order to make life of *human beings*
 - **prosperous** as well as **secure** and **stable** against the **vagaries** of the **nature**.
- In the **mainstream development model**, evolution of the **science** and **technology** *is considered*
 - such an important element that it is *often equated* with **development** by many proponents.

Modern-Western Science and Technology: Mainstream Position . . 2

- The processes of **industrialization** and **modernization**
 - are highly valued as cornerstones of the **development** process—
 - These are possible only because of the advancements in **science** and **technology**.
- As a result, the **science** and **technology**
 - are regarded as universal categories of **progress**,
 - which the non-western world *should also imitate*.

Modern-Western Science and Technology: Mainstream Position . . 3

Some important features of the **science** and **technology** are as follows:

- The **Modern-Western Science** is defined as 'unique' and 'true' as well as universally applicable.
- Both, **science** and **technology** (engendered from **science**) are seen as being independent of **society**
 - both in their **structure** and its **evolution**.
- This means **society** has **no influence** on the **science** and the **technology**.
- In other words, the **course of evolution** of **science** and its **structure** are **self-determined**.

Development & Science and Technology: Important Features . . 1

In the **development** process, **technology** has *multiple roles* to play.

1. It is *expected to facilitate mass production*, which is the key element of *industrialization*.
2. It is expected to result in continuous enhancement in *technical efficiency*, and replacement of *labor*,
allowing reduction of *costs of production*.
3. Technological *innovation* is also expected to reduce the *physical labour, risks*, and *drudgery*
at the *work-places* as well as in *homes*.
4. In addition to this '*economic*' role, the **technology** is *expected to*
facilitate the *socio cultural processes* such as *urbanization* and *modernization*.

Development & Science and Technology: Important Features . . 2

- In fact *socio cultural processes* such as **urbanization** and **modernization**
 - are *predicated upon* (possible only due to) **technological** advancement.
- Thus, it is *believed* that **technological innovations** *will result in*
 - **Improvement** not only in **human wealth** but also in the **human welfare** and **human progress**.
- Because **science** is uniquely true knowledge,
 - it is considered to exist without any blemishes caused by motives or politics among human beings.
- In this sense, **science** is considered as '*pure*' or '*pristine*'.
- Similar is the status of the **technology**, which emerged from the '*pure*' science.

Development & Science and Technology: Important Features . . 3

- Further, because **science** is '**true**', and '**independent**' of '**human**' societies,
 - it is also *considered as beyond* the *scrutiny* of or by
 - the **human**' societies or **human beings** and their *morality*.
- Further, *accepting the* '**modern scientific perspective**' is *also seen*
 - as the way to get rid of traditional (pre-modern) **institutions** and **culture**
 - and the way for '**cultural modernization**' and *emancipation* from the *tyranny* of **pre-modern culture**.



Modern Science and Technology: Critique of Position Mainstream Development Model

Modern Science & Technology: Critique of Mainstream Position. . 1

- The **alternative development perspectives** *have developed* a **thorough** and **multi-faceted critique**
 - of **Modern-Western Science** and **Modern-Western Technology**
 - as well as of **their contribution** to the **processes** of **modernisation** and **industrialization**.
- The **monistic assertions** that the **Science** is '**unique**' and '**true**'
 - **are not only challenged** on **epistemological** and **empirical** basis,
 - **but also found to be intellectually arrogant.**

Modern Science & Technology: Critique of Mainstream Position. . 2

- The claim that the **Modern-Western Science** and **Modern-Western Technology**
 - are **self-determined** in their **structure** and **evolution** is found to be '**vacuous**' (**empty** or **unintelligent**).
- **Science** and **Technology** are found to be **shaped by** and **serve**
 - the **priorities** and **interests** of whomsoever control **their development**.
- Because the **genesis** (= **creation**) and **application** of the **Science** and **Technology**
 - **are controlled** primarily by **certain sections** in human societies,
 - **there is nothing** '**pure**' or '**pristine**' about **Science** and **Technology**.

Modern Science & Technology: Critique of Mainstream Position. . 3

- And **because Science and Technology**.
 - are under the control of **certain sections of human societies**,
 - the **genesis** and **application** of the **Science** and **Technology**
 - should be put under **scrutiny** of **human societies**,
 - with a **wider participation** of **different sections** of **human societies**.

Modern Science & Technology: Critique of Mainstream Position. . 4

According to **alternative development perspectives**,

1. **ecological destructiveness** of **modern technology** is rooted
 - in its **arrogant** and **manipulative** approach toward **nature**.
2. **ecologically** (and **economically**) **inappropriate science** and **technology**
 - **creates new scarcities** through **ecological destruction**
 - (for example, reduction in availability of fertile land, in genetic and crop diversity,
 - and increase in ecological vulnerability (due to monoculture)
3. **modern technology contributes to underdevelopment** through **destruction** of **eco-systems**.

Modern Science & Technology: Critique of Mainstream Position. . 5

According to **alternative development perspectives**,

4. the **central tenet** of **technological worship**

- that **technological advancement must continue** at all costs
 - is in **direct contradiction** to the **laws of nature**.
- Because, in **natural eco-systems**, **equilibrium prevails**.

5. It is **also maintained** that the **complex technologies**

- **have diverged** from **basic processes** of **life** and **proved** destructive to **nature**.

6. **Industrialization** (based on **modern technology**) is

- **inherently resource-intensive**, **resource wasting**, and **exploitative** of **natural resources**.

Modern Science & Technology: Critique of Mainstream Position. . 6

- **Modern technology** is *not politically neutral*,
- **Modern technology** is *politically centralizing* and *politically repressive*.
- **Modern technology** renders *communities* and *people politically vulnerable*
 - due to the *dependence* it *breeds on external inputs controlled by* dominant sections in society.
- *Ever-greater* centralization of *authority* *leads to* a *steady diminution* of *personal freedoms*.
- **Technological processes** create *excessive* *demands* for *raw materials* and *markets*,
 - and *control over raw materials* and *markets* becomes an *essential part* of the *politics* of technological change.
- In periods of *rapid technological transformation* it is *assumed* that
 - *society* and *people* *must adjust to technical change*
 - instead of *technology* *adjusting to social values*
 - such as social equity, *environmental sustainability* and *political participation*.

Modern Science & Technology: Critique of Mainstream Position. . 7

The **eco-feminist perspective** *argues* that

- **science, technology, and development** are not the *universal categories* of **human progress**,
 - but *are* the *special projects* of **modern western patriarchy** aimed at subjugation of **women** and **nature**.

According to **alternative development perspectives**,

- there is *absence of criteria for evaluating* **science** and **technological systems**
- in terms of *resource use efficiency* and *capability* for *basic needs satisfaction*.
- **modern technology**, *being capital-intensive* and *labour displacing*,
 - *destroys employment potential* of *economic activities*.

Modern Science & Technology: Critique of Mainstream Position. . 8

- **Modern technology** creates a *false impression* of *economic efficiency*
- by *externalizing some costs* while *making other invisible*.
- *Chemical* and *nuclear technologies* attack the very *substance of life*.
- The *factories* using **modern technology** are *dangerous places to work* and *industrial accidents* are common.
- **Industrial society** is *suffering from* a *virtual epidemic* of *cancers* and *immune system disorder*.

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According to **alternative development perspectives**,

- It is *not* correct to say **modern technology** is *socially progressive* or *socially liberating*
 - because of its *inherent push* for **modernization** of **traditional communities**.
- In fact, **modern technology** is *socially regressive* as
 - it destroys supportive, kinship-based, familial **social relationships**
 - in the **pre-industrial communities** and replaces them with the *rigid* **social hierarchies**.
- It is claimed also that *social stress* and *tensions emerging from* the feeling
 - of *being dispossessed* or *controlled* or *made helpless* by **modern technology**
 - *constitute a breeding ground* for *violence in society*.

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According to **alternative development perspectives**

- current **economic** and **technological development** *results in shattering of* traditional rural industries.
 - *marginalizes* and *dispossesses* increasing number of **people** from *productive capacity*.
- There is always *unequal access* to **new technology** because
 - *it is associated with high capital* and *energy intensiveness*.
- **Modern technology** *tends to magnify inequalities* between and within **countries**.