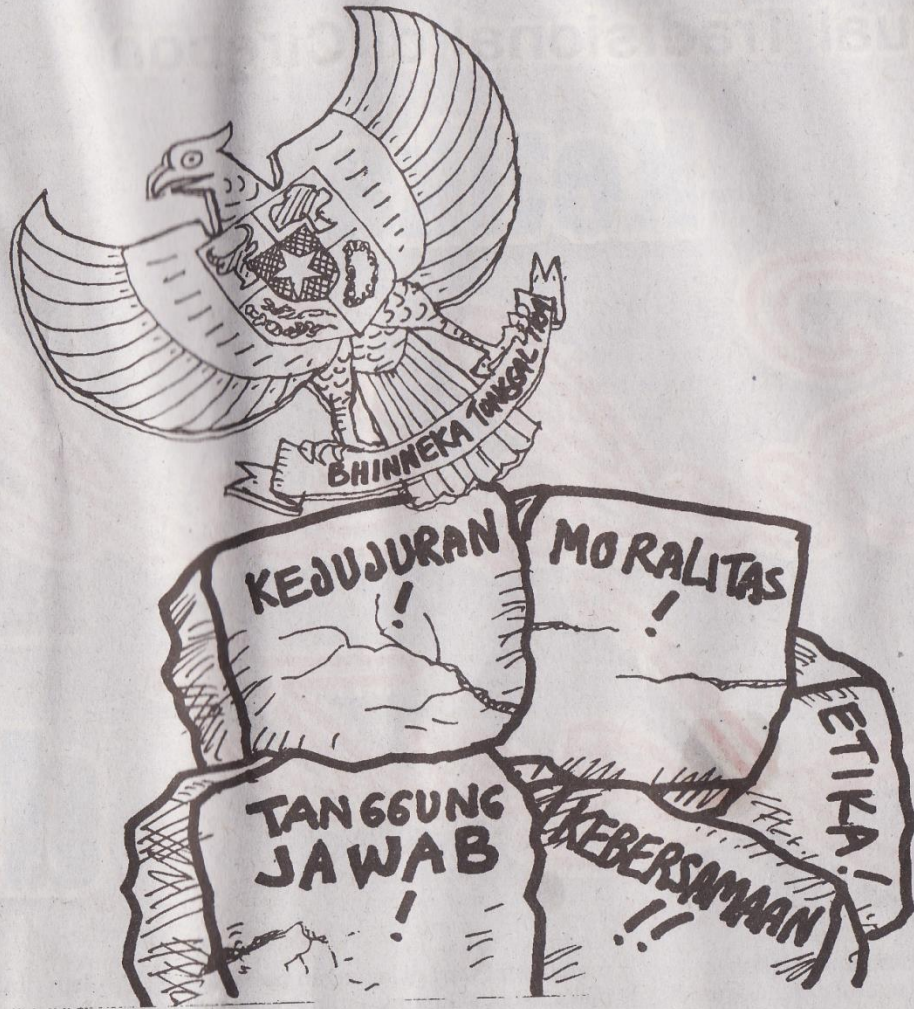


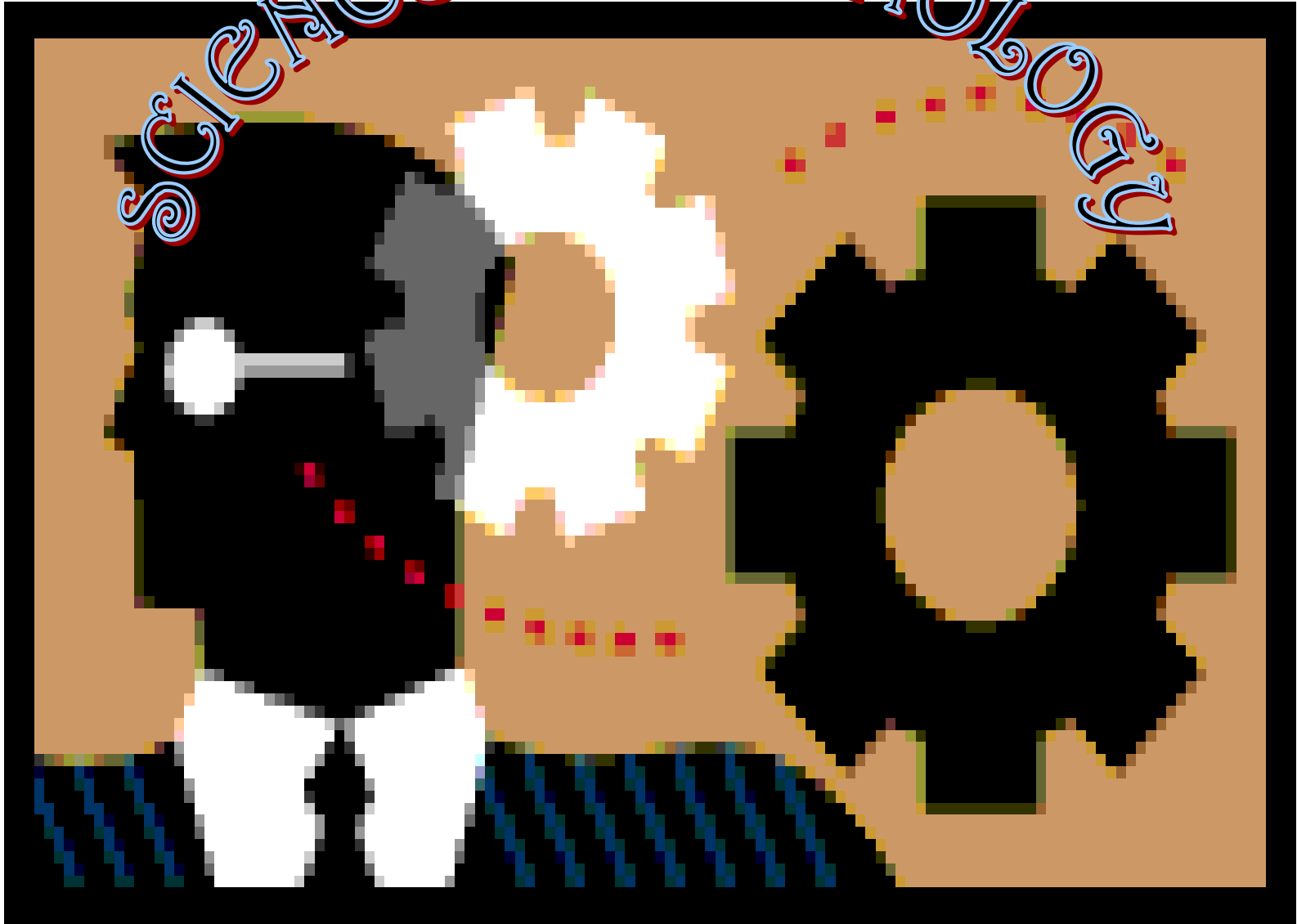
KULIAH FILSAFAT ILMU
XI & XII

DR. NOVERMAN DUADJI,MSI
DR. NOVITA TRESIANA,MSI



TS 2010
"PIKIRAN RAKYAT"

SCIENCE & TECHNOLOGY



SCIENCE AND TECHNOLOGY (A.F.Calmers)

- **The modern world: is largely governed by the concept of technical progress which sweeps all other considerations before it**
- **Undoubtedly the rise of modern science was accompanied by a growth in science-based technology, and the prestige of modern science derives in large part from the success of technological innovation**
- **A piece of technology is not just an intervention in nature. It is also an intervention in the human, social world. In this sense, there will always be an entrepreneurial dimension to engineering.**
- **“a society should order or encourage such things as atomic bombs or nuclear power or genetic engineering, however much individual scientists may press political authorities or commercial interests to sponsor their work**

TAHAP-TAHAP PEMIKIRAN MANUSIA

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graph TD; A([TAHAP TEORIA  
BERSIFAT DESKRIPTIF  
DAN ABSTRAKTIF]) --> B([TAHAP PRAKTIS  
BERSIFAT KREATIF,  
INOVATIF, REKAYASA,  
MANIPULATIF]); B --> C([TAHAP MORAL  
ADANYA TANGGUNG  
JAWAB SOSIAL]);
```

**TAHAP TEORIA
BERSIFAT DESKRIPTIF
DAN ABSTRAKTIF**

**TAHAP PRAKTIS
BERSIFAT KREATIF,
INOVATIF, REKAYASA,
MANIPULATIF**

**TAHAP MORAL
ADANYA TANGGUNG
JAWAB SOSIAL**

FUNGSI ILMU DALAM PERUBAHAN PEMIKIRAN MANUSIA

ALAM KETIGA : TATA NILAI

**MEMPERHATIKAN UKURAN KEPANTASAN DAN KEBENARAN
PERAN AGAM SEBAGAI BATAS PENCARIAN KEBENARAN**

**MELALUI ILMU MENCARI JAWABAN DARI
BERBAGAI PERTANYAAN**

ALAM KEDUA : REKAYASA / ARTIFICIAL

**KREATIVITAS DAN KETIDAKPUASAN
DIKUTI SIKAP SERAKAH DAN DESTRUCTIVE**

**MELALUI ILMU MELAKUKAN
PERUBAHAN-PERUBAHAN**

ALAM PERTAMA : ASLI / BELUM BERUBAH

**KEHIDUPAN BERDASARKAN APA ADANYA / ALAM SEKITARNYA
KETIDAKBETAHAN MANUSIA UNTUK HIDUP STATIS**

PEMIKIRAN MANUSIA

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graph TD; A((PEMIKIRAN MANUSIA)) --> B[ILMU PENGETAHUAN]; A --> C[TEKNOLOGI]; B --> D[ILMU PENGETAHUAN & TEKNOLOGI]; C --> D; D --> E[PENGENDALIAN ILMU PENNGETAHUAN & TEKNOLOGI];
```

ILMU PENGETAHUAN

MENDALAMI PENGERTIAN
MANUSIA DAN ALAM
SEKITARNYA

TEKNOLOGI

PEMIKIRAN UNTUK
MELAKUKAN PERUBAHAN
DEMI KEPENTINGAN MANUSIA

ILMU PENGETAHUAN & TEKNOLOGI

KEPERLUAN UNTUK MEMPERTAHANKAN HIDUP DENGAN
MENGUBAH DAN MENINGKATKAN APA YANG TERSAJIKAN
DALAM KEHIDUPAN DAN LINGKUNGANNYA

HASIL BUDAYA MANUSIA

PENGENDALIAN ILMU PENNGETAHUAN & TEKNOLOGI

MEMELIHARA KESELAMATAN, KEAMANAN, KETENTRAMAN,
KETENANGAN, DAN LELESTARIAN LINGKUNGAN

MENJAGA KESEIMBANGAN HIDUP

EFFECTS AND DEVELOPMENT OF TECHNOLOGY

- **The form taken by a technological system is not design but an evolutionary system. The trajectory is defined as its operations adjust to the specific social, geographic, economic and political characteristics of environment, and to overcome the technical problems posed by its growth and its competition with other technologies (Milton Mueller)**
- **Then to predict the direction or outcome of particular technological innovation in advance is bound to be uncertain. This cuts against both sides in many debates about technology: against who would advocate the development of a particular technology and against who would seek to control it, in so far as their positions are based on the certainty of their predictions about the effects and future development of technology.**
- **“.....those societies which go in most for attempt centrally to control technological development which suffer the worst pollution of their environment by technology”**

KRITIK-KRITIK TERHADAP PEMIKIRAN TEKNOLOGIS

- Fenomena 'de-humanism'
 - Manusia lebih mempercayai pada teknologi dari pada pemikiran manusia
- Counter culture
 - Kritik terhadap pergeseran budaya manusia di A.S. dimana sikap dan perilaku manusia sudah teknokratik, faceless dan inhuman
- Pendewaan teknologi:
 - Pandangan bahwa kehidupan manusia akan bergantung pada teknologi, siapa yang menguasai teknologi dialah yang akan menguasai kehidupan manusia
 - Dalam praktek memang hampir tidak kelihatan aktivitas manusia yang terlepas dari jaman teknologi yang akhir

GOD MUST BE CRAZY

SISI POSITIF DAN NEGATIPNYA

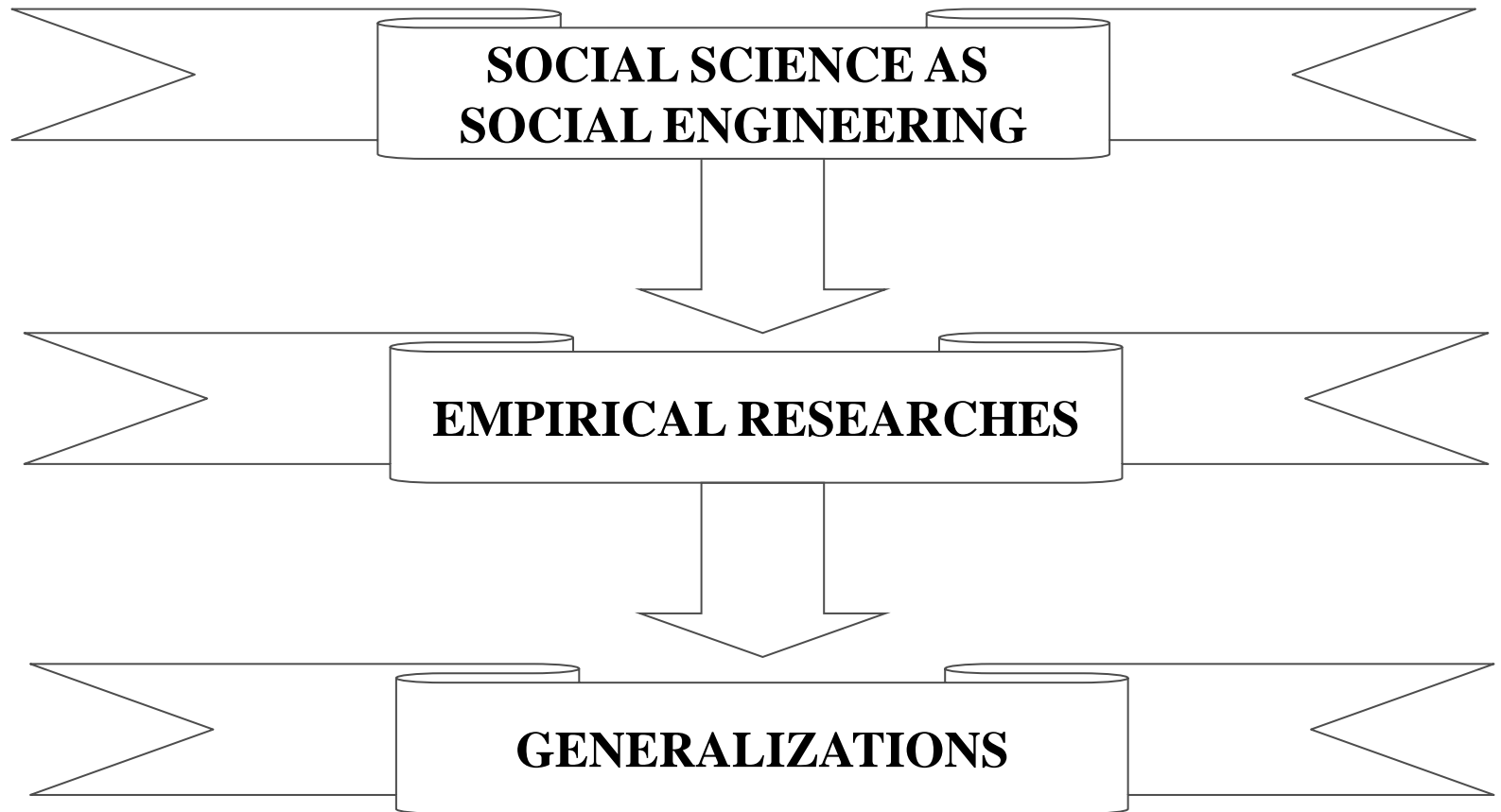
- Memperlancar & mempercepat proses
 - Melakukan modifikasi
 - Melipatgandakan produksi
 - Mengembangkan kreativitas
 - Mendorong inovasi
 - Dls
- Merusak nilai-nilai lama
 - Merusak lingkungan
 - Polusi
 - Mengelabui / memanipulasi
 - Mendorong keserakahan
 - Dls

KNOWLEDGE ACCUMULATION

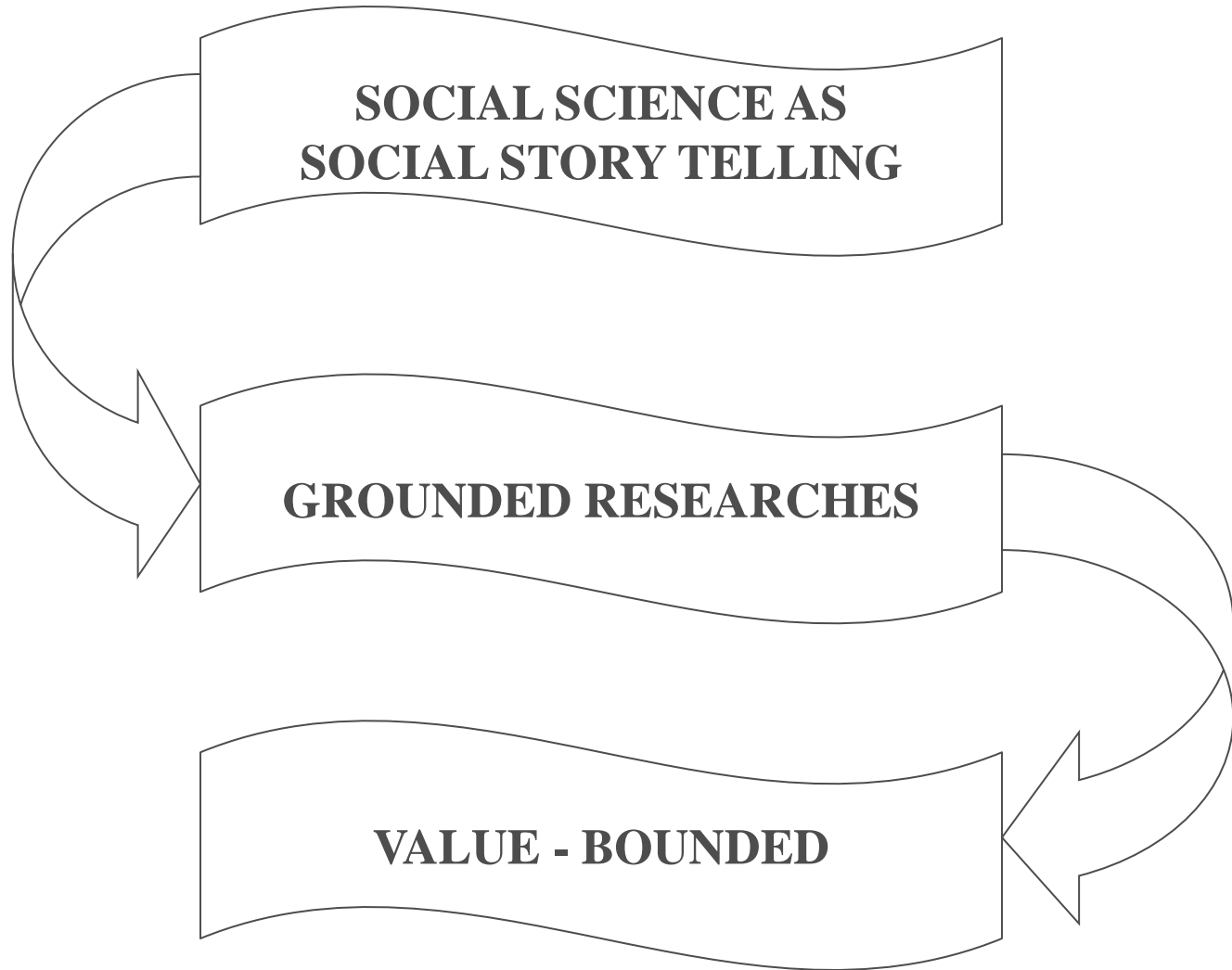
Jennifer C. Greene:

- 1. Post-positivism (Post-empiricism)**
- 2. Interpretivism**
- 3. Critical Science**

Post-positivism (Post-empiricism)



Interpretivism



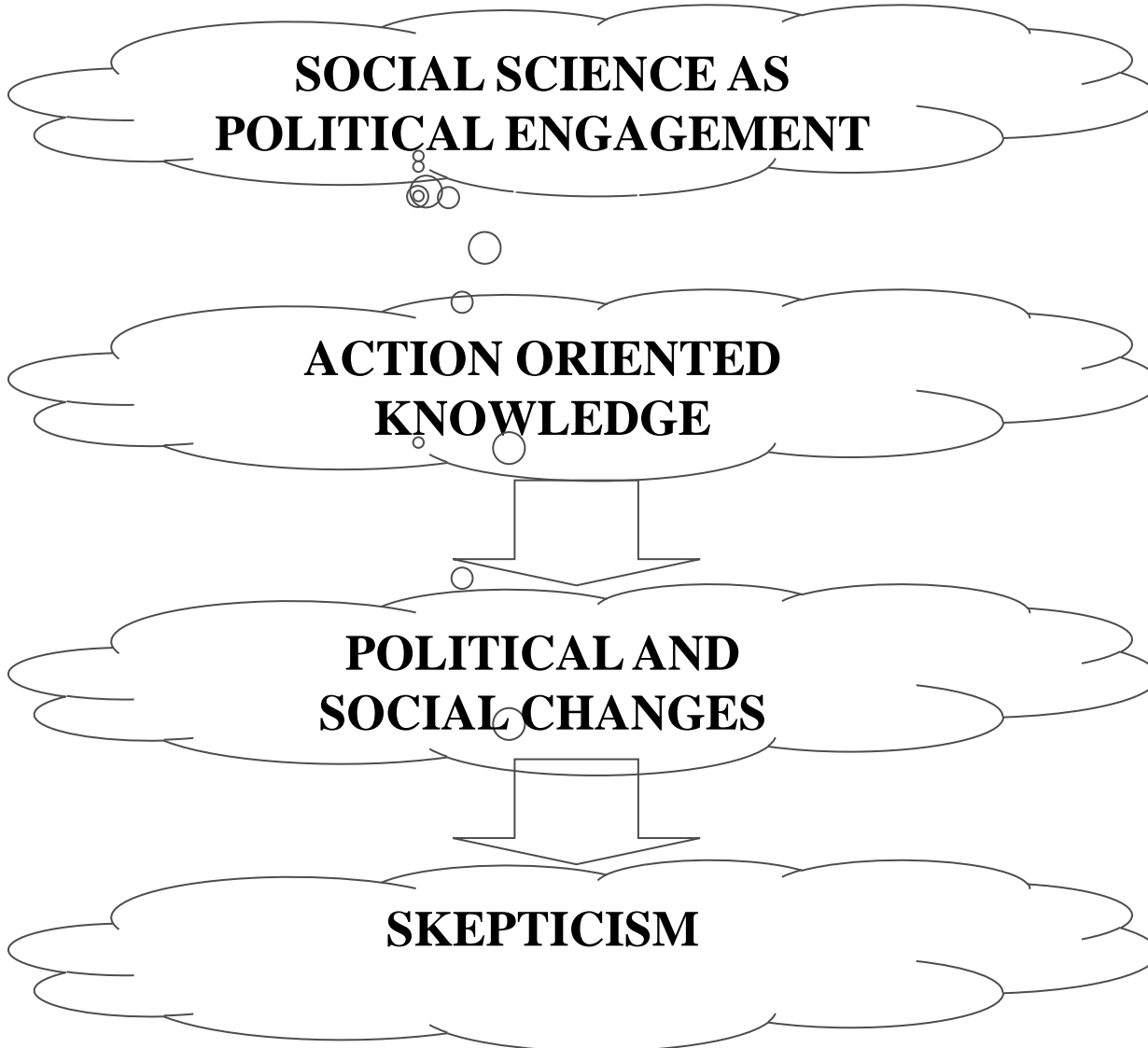
Critical Science

**SOCIAL SCIENCE AS
POLITICAL ENGAGEMENT**

**ACTION ORIENTED
KNOWLEDGE**

**POLITICAL AND
SOCIAL CHANGES**

SKEPTICISM



POST-EMPIRICISM

(John K. Smith)

There are four related points about “post-empiricism”:

1. No absolute foundation for knowledge → Not every knowledge claim is equally well warranted
 2. There is a distinction made between what people believe to be true and what really is true → Objective and truth
 3. Realist → Realism: The view that entities exist independently of being perceived → Substance to both distinction between “believe true” and “really true” and the definition of objectively and truth
 4. The properly done study → Acted appropriately in carrying out the research → looking at the process and proper method of the study
- For post-empiricism a judgement about the quality of research in effect a judgement about methodology
- Valid studies were procedurally correct

INTERPRETIVISM

- Interpretivism denies the possibility of universal social laws and empirical generalizations
- Interpretivist research generates working hypothesis that bare connected not to priori theory but to a context-specific which may or may not informed by existing knowledge
- Interpretivist knowledge inevitably reflects the values of the inquirer

→ GOUNDED RESEARCH

CRITICAL SCIENCE

- The practical important of critical social science, its role and function in the world of practice
- Critical social science denies the distinction between 'is' and 'ought', between science as theory and research as practice and normative, ideologically based action
- Practical political impact
- To change world not to describe it

→ CONTEMPORARY SCIENCE

Karakteristik Pendekatan

- Post Positivism → Generalization → Quantitative Approach
- Interpretivism → Grounded → Qualitative Approach
- Critical Science → Comtemporary → Social and Political System Approach
→ Perubahan Paradigma Pemikiran

META-THEORY

(UNESCO: Mario Bungo → Scientific thought)

- **Meta-theory is a theory about some theory or class of theories**
- **A meta-statement is a statement about another statement or statements**
 - **Such statement must be justified by other means or else of the theory**
- **No statement in the theory remain isolated: every statement is either an assumption or a conclusion. More precisely, a theory is a hypothetico-deductive system, as it can be formulated in such way that every formula in it is either an initial premise or a logical consequence of a set of initial assumption**

KESIMPULAN PEMAHAMAN META-THEORY

"A theory, whether mathematical or factual, has certain formal characteristics that distinguishes it from a body of opinion. These characteristics are studied by meta-mathematics"

- Pengaruh dari cyber-learning:
 - = Belajar jarak jauh dengan menggunakan fasilitas komunikasi elektronik → tele-seminar, tele-discussion
 - = Mempercepat proses analisis melalui program sistem informasi elektronik → program-program komputer