

Dialectics, Contradictions and Process Research

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Outline

- I. Opening Example: Contradictions at Toyota
- II. Dialectics: A Living Tradition
- III. **Process** and **Contradiction** in The **Dialectical** View
- IV. Return to Toyota (and other examples)

I. Acceleration Backfires



Toyota's Car Assembly Line

Toyota, Spring 2014

- Announced its vision to become more efficient by replacing robots with humans.
 - *“We cannot simply depend on the machines that only repeat the same task over and over again; to be the master of the machine, you have to have the knowledge and skills to teach the machine.”* Mitsuru Kawai - a company veteran tapped by the company to promote craftsmanship in Toyotas’ plant
- Restrains expansion with a three-year freeze on new car plants
- Freeze and spread of manual work may bear fruit in the long run, but it could come at the expense of near-term sales growth

The Unintended Perils of Acceleration

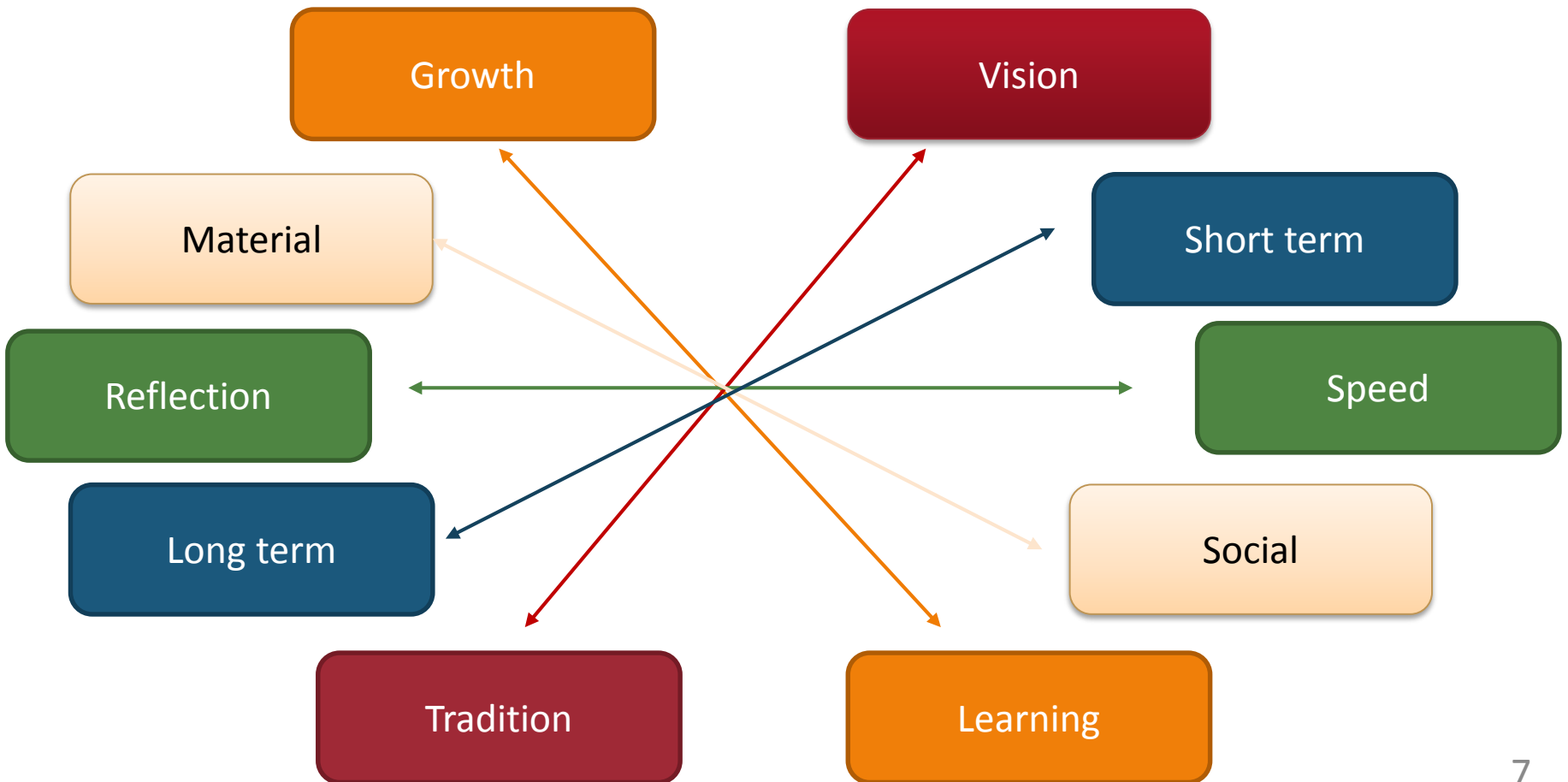
- A counter intuitive move
- Previous Toyota (fatal) **car accidents** caused by unintended **acceleration**
- As well, president Akio Toyoda has realized the company's **accelerated growth** interfered with its ability to struggle and learn
- A drastic change of priorities:
 - A shift back towards quality and efficiency.
 - **A return to basics** Toyota came to neglect: the use of machine masters and craft work and the commitment to the principles of continuous improvement and building excellent and safe cars.

The Servant and the Master

- The **broader picture**: The growing dominance of smart machines and automation in our lives (Kerr, 2014)
 - First machines replaced our muscles but now they replace our brains
 - *‘All our invention and progress seem to result in endowing material forces with intellectual life, and stultifying human life into a material force’*. Karl Marx
 - As this race makes machines **human** like it also risks making humans more **machine** like – mindless, lazy, detached, devoid of meaning, even redundant.
- The **servant** gradually becomes our **master**.

Toyota Contradictions Inc.

The Toyota and automation anecdote is animated by several opposing tendencies or contradictions:



Toyota Contradictions Inc.

- In fact, researchers have long used Toyota as a lab for theorizing about managing organizational **paradoxes** (Adler et al, 1999; McDuffie, 2009):
 - Efficiency and flexibility
 - Standardization and creativity
 - Cost and quality
- **Dialectics** – the focus of this presentation - offers a complementary and less familiar lens on contradictions and process
- It also highlights different questions to which we will return shortly

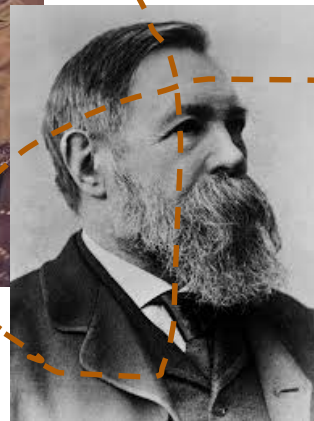
II. Dialectics: A Living Social Science Tradition



Friedrich Hegel
1770-1831



Karl Marx
1818-1883



Friedrich Engels
1820-1895

Interpreters vary in what they see as distinct and important in dialectics:

Conflicts between opposing social forces and **groups** are a perpetual source of *endogenous social change* in alternating directions as each new synthesis incorporating elements of both opposites evokes counterforces in an unending pattern of dialectical **development**. *(Blau, 1972).*

A process of conceptual, social or natural **conflict, interconnection** and change in which the *generation, interpenetration and clash of oppositions*, leading to their *transcendence* in a fuller or more adequate mode of thought or form of life (or being), play a key role. *(Bhaskar, 1993)*

Primarily involving a search for fundamental principles that account for the emergence, reproduction, transformation and dissolution of specific **social orders**. *(Benson, 1977)*

Despite their differences, these interpretations share the view of dialectics as fundamentally committed to the concept of **process**

Dialectics as a Process Perspective

- Dialectics provides a rich and broad-brush **macro** perspective on **process** and social **relations** which highlights their **historical**, **economic** and **political** aspects and is supported by the Hegelian ‘**Logic** of Contradiction’.
- Dialectics replaces the notion of ‘**thing**’ with notions of ‘**process**’ and ‘**relation**’ (Ollman, 2003).
- It views the social world in a continuous state of **becoming** – social arrangements that seem fixed and permanent are temporary, arbitrary patterns, and any observed social pattern is regarded as one of several possibilities (Benson, 1977).
- It views social life as a **ceaseless interplay** of opposing tendencies (Baxter and Montgomery, 1996).

A Simplified Dialectic Dynamic

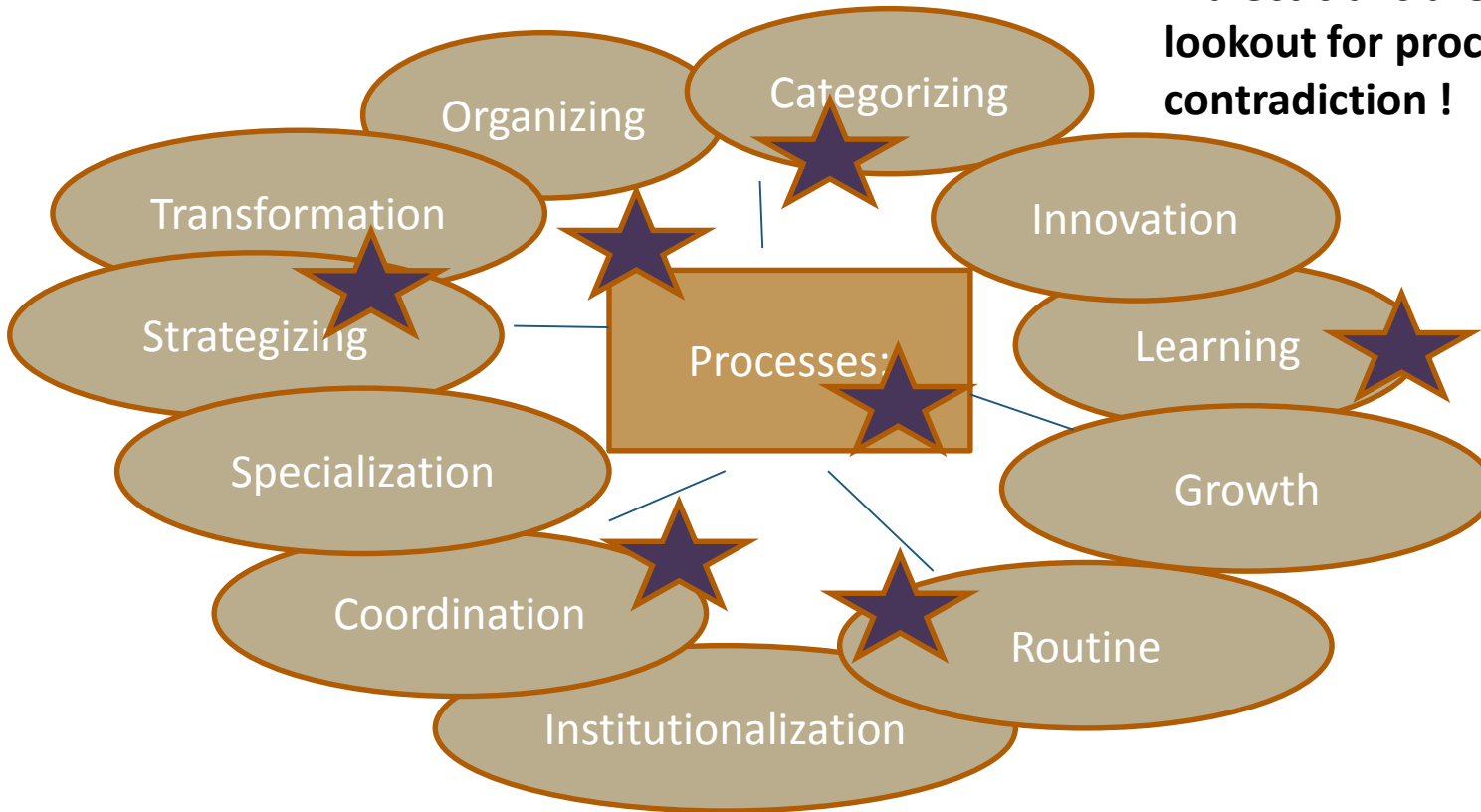
- In the dialectical view **social arrangements**, constructed and produced by people in their **ongoing interactions**, generate **inner contradictions** (Ruptures, inconsistencies, imbalances and incompatibilities in **the fabric of social life**) that **defeat the purposes** for which they were set up, leading to a continuous pattern of **affirmation** (thesis), **negation** (antithesis) and **transformation** (counter negation, also referred to as synthesis or transcendence).
- In this dynamic each negation rejects a previous form, yet also **retains** something from that form (leading to a **spiral development** as opposed to a cycle).
- The negation of the negation allows the progressive development of the system to a **limit** where its inner contradictions can **no longer** be contained.
- This dynamic can involve **more than one pair** of antithetical forces. Moreover, rather than leading to a synthesis the conflict can be so intense that contradictions cannot coexist. The result is the **destruction** of one (or both) side which ends the contradiction but produces new ones.

III. Process and Contradiction in The Dialectical View

Dialectics' concept of **contradiction** can only be appreciated against the backdrop of its **process** and **relational ontology**

Process and Contradiction in The Dialectical View

Dialecticians are always on the lookout for process and contradiction !



Dialectics process and relational ontology is manifested in multiple linkages between **contradiction** and **social** and **organizational processes**:

1. Contradictions >> Process

- Contradiction serves as a **trigger** and **motor** for process, transformation and **endogenous change**. The agential notion of praxis mediates between contradiction and social change.
- Change can arise from **accumulation** of contradictions and tensions (**quantity** leads to **qualitative** change)
- Contradictions can also help **maintain** and **reproduce** a system or process and keep them in a temporary and effortful equilibrium. They can help explain **persistence** as well change.
- Dialectic change contrasts with evolutionary, teleological and life-cycle models as it requires at least two entities and incorporates a **constructive** mode of development that leads to **novel forms** (Van de Ven and Poole, 1995).
- It stresses several **process notions** such as sudden reversals, unanticipated outcomes, endogenous potentials, both incremental and radical change, spiral development, tentative equilibrium and emergence.

2. Process >> Structure >> Contradiction

- Structure (order, institutions) – a main source of dialectical contradictions – is itself a **product** of social **interactions** and processes.
- This origin of contradictions makes them regenerative, and help explains why they constitute a **'normal'** part of social life.

3. Process >> Contradictions

- Contradictions also originate in the **incompatible** or imbalanced **development** of different elements, institutions and systems over time, for example, in the way copyright laws fail to keep pace with technological change.

4. Contradictions Shift and Develop Over Time

- Consistent with the notion of 'becoming' dialectics is not solely concerned with contradictions as externally imposed or given (i.e., being) but traces how they originate, evolve, transform and potentially institutionalized.
- The terms of the contradiction and the degree to which they are opposed can also shift over time.
- Particularly, contradictions can become more intense and more clearly demarcated, and their struggle more fierce. For instance, disagreements in an alliance or a marriage can increase to the point that reconciliation is impossible.

5. Opposing Elements Interpenetrate

- Scholars increasingly refer to the coexistence of **opposing** and **complementary** elements, processes or effects as a **duality**
- Viewing contradictions as a duality means the two largely opposing elements may **interpenetrate** until one includes elements of the other and they are no longer mutually exclusive
- By viewing parts and wholes as **mutually constituting**, dialectics' **relational** perspective provides a mechanism for **connecting levels of analysis** and making them less clearly demarcated.

6. Dialectic Contradictions Often Refer to Self Negating Processes

- In dialectics contradictions often means a union of two or more elements, forces or **processes**.
- In this view, contradictions can be simultaneously supporting and undermining, stabilizing and destabilizing, complementing and opposing, functional and dysfunctional.
- Dialectical social change is viewed as a particular transformation in which some social processes (or actions) can be described as **simultaneously generative** and **destructive** (Hernes, 1976).

IV. Some Examples of Dialectical Patterns

Some Examples of Dialectical Patterns

- **Example 1:** In **Kuhn's** model of scientific development when not accounted for by the existing paradigm, the gradual accumulation of puzzles, anomalies and questions encountered in the conduct of 'normal science' may eventually lead to a new paradigm in which they fit better.
- **Example 2:** The historical rise of **Apple's operating system** provides another example of such transformation. Historically having a small network of users and developers, it was considered highly reliable. As the company grew, its operating system attracted more users and application developers. The latter included creators of software viruses. An unintended consequence of growing popularity was that reliability was undermined
- **Example 3:** Hargadon and Douglas (2001) study of **Edison's** introduction of electricity shows how he skillfully exploited existing institutions in the process of displacing them.
- **Example 4:** Organizations working on rehabilitation, vaccination or **crime prevention** may not be needed if they fully reach their objectives
- **Example 5:** The very things that make a system organized, can be turned against the system itself (9/11 tragic events, **cyberwars** and cloud computing)

Back to Toyota (Hopefully with a spiral and more elevated understanding...)



A Dialectical lens on Toyota and the Automation Episode is likely to focus on questions such as:

A Dialectical lens on Toyota and the Automation Episode

- How different tensions and contradictions rejuvenated the company, **propelled** its strategy and evolution over time and led it into occasional **crises** as well as to **new accomplishments** (Takeuchi and Osono, 2008)?
- How machines and humans both **complement** and **conflict** with one another? How over time masters and servants **reversed** their roles yet **preserved** elements of one in the other?
- How Toyota's production system **evolved** from inner tensions? How its development reconciled craft work with mass production?

A Dialectical lens on Toyota and the Automation Episode

- How changes in **quantity** (e.g., computer speed) led to **qualitative** change (e.g., computers doing the job of experts)?
- What **impending signs** for Toyota quality problems existed way before their eruption (Nonaka and Zhou, 2012)?
- How Toyota's processes of growth and automation **defeated their original purpose** and became **self-limiting**?

Time to Stop (Before This
Presentation Defeats its Purpose...)

Thank You