Marx's *Capital* in the Light of the Comparative Modern History

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[1] Civil Revolution on Three Stages within Capitalism

The Schema of 'civil society = bourgeois society = capitalism' is correct in **the first civil revolution**, typically in the 1789 French Revolution, that establishes capitalist state for **industrial revolution**, that is, the last stage of primitive accumulation. But the schema becomes false after **the second civil revolution**, typically of 1848 in France, when immediate workers establish legal equal relationship with bourgeoisie. **Industrial revolution** causes the second civil revolution that raises **workers movement, battle for democracy and woman's emancipation**. **The third civil revolution** has presently been on its way that demands to realize social values of **Gender, Ecology, Minority and Handicapped**. Marx's *Capital* focuses on the society just after the second civil revolution, but foresees the third as illustrated especially in Chapter 23 of the general law of capitalist accumulation.

[2] Primitive Recursive Function hidden within Marx's *Capital*

Opposite ordinary allegations, Marx is a Kantian rather than a Hegelian. That is justified by textual confirmation of use frequency of philosophical key word 'Schein (semblance)'. Kant writes the word 99 times as the system building term through his *Critique of Pure Reason (CPR)*. The word is also systematically utilized 26 times in the first Volume of *Capital*, while only a few times in Hegel's *Science of Logic*. Kant insists in his *CPR* (B70-71) that **Schein** emerges when **relationship** between **extremes** becomes independent from them and turns to their **attribute**. Marx evidently follows Kant, writing the almost same in *The Grundrisse* (Note III, page 26), and defines that Schein becomes **medium** firstly as money, organizing capitalism in multi-strata. **Marx's *Capital* is the proof of Kantian thesis on Schein in capitalist economy.**

Commodity is relational existence. **Goods** as use-value becomes **commodity** when it enters into **relationship** of modern private exchange. By **unconscious abstraction** of concrete use-value of goods by owners up onto the infinite point (P∞), the **relationship** transforms into **value** as **attribute**. Value in *Capital* is Kantian Schein. 'Critique of Political Economy' implies Marx's critical succession of Kantian **Critical** Philosophy.

Value [■] of a commodity with use-value [□] expresses itself with different kind of use-value [△] on the opposite commodity that has the same value [■]. The first value form is shown with signs as [□→■＝■→△]. V*alue form is a kind of 'negative self-reference'*, because subject commodity in relative value form **refers** to *itself* with **self-negative** use-value [△] of commodity in equivalent form.

The value form [□→■＝■→△] implies a paradox. Signs [□,△] are the same as use-value [U], and signs [■＝■] are the same as values [V]. The value form [□→■＝■→△] is rewritten as [U→V:V→U] that is a logical paradox. But paradox is no logical failure. It is possible to rewrite it as 'primitive recursive function (PRF)'. PRF is schematized as function (a→b) (-a). The function approaches to itself from **backwards** by advancing **forwards**, paradoxically.

As Marx mentions in the Foreword to the First edition of *Capital*, **value form is the sell-form for capitalist organization.** Value form implies PRF, then **PRF of value form is the principle of organic formation of capitalism through various forms of Schein.** Just as demonstrated in Hiroshi Uchida's recent work, *Capital in Symmetry*, published in 2015 through Shakaihyoronsha Publishers, the first book of *Capital* is simply shown in PRF of value form as follows.

Marx's *Capital*: f (Φ,*Φ*,Ψ) = ①②③([(ΦΨ)²*Φ*] [(ΦΨ)² Φ])³

(①: the first value form, ②: the second, ③: the third. Φ,*Φ* : two kinds of inverse symmetrical operation of ①②③. Ψ: rotational symmetrical operation of ①②③)

Concepts in *Capital* are never unconditionally given, but emerge through the operation of PRF. The function is exactly defined later in 1931 after Marx's death in 1883 by Kurt Gödel in his article on The Incompleteness Theorem I·II. Sharing PRF, Marx and Gödel might have investigated their own themes each in the neighborhood.