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学術俯瞰講義「文化資源、文化遺産、世界遺産」

文化資源と情報技術の変化

2017/10/30

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1. 西欧史における印刷術の評価

Eisenstein, Elizabeth. 1979. *The Printing Press as an Agent of Change*.

In this work she focuses on the printing press's functions of dissemination, standardization, and preservation and the way these functions aided the progress of the Protestant Reformation, the Renaissance, and the Scientific Revolution. Eisenstein's work brought historical method, rigor, and clarity to earlier ideas of Marshall McLuhan and others, about the general social effects of such media transitions.

This work provoked debate in the academic community from the moment it was published and is still inspiring conversation and new research today. Her work also influenced later thinking about the subsequent development of digital media. Her work on the transition from manuscript to print influenced thought about new transitions of print text to digital formats, including multimedia and new ideas about the definition of text.

https://en.wikipedia.org/wiki/Elizabeth_Eisenstein

Johns, Adrian. 1998. *The Nature of the Book Print and Knowledge in the Making*.

In *The Nature of the Book*, Adrian Johns transports his readers back to early modern England and the cauldron of creative and commercial forces in which print culture was formed. His uncanny eye for detail allows us to visit booksellers' shops and the Royal Society, paper manufactories and type foundries. We can eavesdrop on the often-bitter disputes between authors and printers, printers and booksellers, clerics and intellectuals as they debate and resolve the meaning and rights attached to the creation of ideas, their appearance in written form and then in print, and the opportunity to sell, buy, and read printed work. Johns focuses on the interplay between the scientific and print revolutions and on their roles, both complementary and antagonistic, in the production and dissemination of knowledge.

<http://www.adrianjohns.com/nature/>

2. 政府・市場・技術 — 文化資源を取り巻く環境

限定された合理性の世界では、個々の人間の計算能力を拡大し、彼らの集団的な生存と繁栄の可能性を高める方法が、いくつか存在する。市場と管理階層とを組み合わせることによって、人類は仕事の専門家と分業の能力を著しく高めてきた。人口の莫大な増加と拡散を一現代医学や現代技術もそれとある程度のある関係があるが—これらのメカニズムのみですべて説明することは行き過ぎであるとしても、地球全体にわたる今日の人類の優位は、これら社会的人工物により可能となった人間理性の増大の証なのである。 サイモン、H. 1999. 『システムの科学 第3版』、p.51. パーソナルメディア.

官僚制 Bureaucracy

政府、企業など、規模の大きな組織が持つ階層構造を持った管理・支配の体系

近代的官僚制の諸原則 (M. ウェーバー)

- 法律で規定された権限
- 階層化された組織
- 専門性による分業
- 体系化された文書管理

cf. <https://ja.wikipedia.org/wiki/官僚制>

Dysfunctions of Bureaucracy

Any action can be considered in terms of what it attains or what it fails to attain. "A way of seeing is also a way of not seeing--a focus upon object A involves a neglect of object B." In his discussion, Weber is almost exclusively concerned with what the bureaucratic structure attains: precision, reliability, efficiency. This same structure may be examined from another perspective provided by the ambivalence. What are the limitations of the organizations designed to attain these goals?

Merton, Robert K. 1957. *Social Theory and Social Structure*: 195-206.

1980年代のペルーで家の登記に必要な事務手続き（第一段階）

De Soto, Fernando. 2002[1989] *The Other Path*. Basic Books.

What is Governance?

Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them.

<http://info.worldbank.org/governance/wgi/#home>

The Worldwide Governance Indicators (WGI)

The Worldwide Governance Indicators (WGI) project reports aggregate and individual governance indicators for over 200 countries and territories over the period 1996–2016, for six dimensions of governance:

- Voice and Accountability
- Political Stability and Absence of Violence
- Government Effectiveness
- Regulatory Quality
- Rule of Law
- Control of Corruption

<http://info.worldbank.org/governance/wgi/#home>

The Guatemalan Police Archives

In July 2005, in an abandoned warehouse in downtown Guatemala City, Guatemala, delegates from the country's Institution of the Procurator for Human Rights uncovered, by sheer chance, a vast archive detailing the history of the defunct National Police and its role in the Guatemalan Civil War. Over five rooms full of files containing names, address, identity documents, were brought to light.

https://en.wikipedia.org/wiki/Guatemala_National_Police_Archives

cf. 関雄二・狐崎友巳・中村雄祐（編著）2009. 『グアテマラ内戦後：人間の安全保障の挑戦』。明石書店。

Basic Features of Market Design

- Information flows smoothly.
- People can be trusted to live up to their promises.
- Competition is fostered.: “Alternatives exist”.
- Property rights are protected but not overprotected.
- Unintended side effects on third parties (negative externalities) are curtailed.

McMillan, John. 2002. *Reinventing the Bazaar: A Natural History of Markets*. W.W. Norton.

Governments provide services that are typically nontradable, often lack scale, and are not subject to market competition.

World Bank. 2016. *Digital Dividends*. Overview.

Digital Dividends

Overview—Strengthening the analog foundation of the digital revolution.

Digital technologies have spread rapidly in much of the world. Digital dividends—the broader development benefits from using these technologies—have lagged behind. In many instances digital technologies have boosted growth, expanded opportunities, and improved service delivery. Yet their aggregate impact has fallen short and is unevenly distributed.

For digital technologies to benefit everyone everywhere requires closing the remaining digital divide, especially in internet access. But greater digital adoption will not be enough. To get the most out of the digital revolution, countries also need to work on the “analog complements”—by strengthening regulations that ensure competition among businesses, by adapting workers’ skills to the demands of the new economy, and by ensuring that institutions are accountable.

The Risks: Concentration, Inequality and Control

Many problems and failures of the internet surface when digital technology is introduced but the important analog complements remain inadequate. What are these complements? The main ones are regulations that ensure a high degree of competition, skills that leverage technology, and institutions that are accountable.

World Bank. 2016. *Digital Dividends*. Overview.

3. “What a resource!”

100 Under \$100

<http://100under100.org/>

トイチユ、ベツツイ. 2016. 『WOMEN EMPOWERMENT 100—世界の女性をエンパワーする 100 の方法』 (英治出版).

cf. Kozaki, Tomomi & Yusuke Nakamura. 2017. “The Evolving Life Improvement Approach: From Home Taylorism to JICA Tsukuba, and Beyond”, JICA Research Institute Working Paper No.146.

Design with The Other 90%: Cities

<http://www.designother90.org/>

東京文化資源会議

<http://tohbun.jp/>

神田祭ラボ2017 powered by 地図ファブ

<http://tohbun.jp/k-lab/>

4. 情報技術の変化と読み書き算術

Skills for the digital economy

Technological change means that many routine tasks will soon be done by machines. In contrast to previous episodes, the internet will also make many tasks carried out in white-collar jobs redundant. This puts a premium on different types of skills that automation complements rather than replaces. Education systems have been slow to respond to this challenge. Furthermore, the pace of change is fast, and the types of skills in demand change quickly. So workers will have to upgrade their skills frequently throughout their careers.

World Bank. 2016. *Digital Dividends*. Overview.

Digital Dividends@Edx

<https://www.edx.org/course/digital-dividends-strengthening-analog-wbgx-wdr01x>

東京大学大学院横断型教育プログラム Digital Humanities

<http://dh.iii.u-tokyo.ac.jp/>

東京大学大学院情報学環DNP学術電子コンテンツ研究寄付講座

<http://dnp-da.jp/>

Procept: Symbols as Process and Concept

The symbols that occur in arithmetic and algebra are used in special ways. Not only do they specify operations that can be performed as a sequence of steps, they also operate as mental entities that can themselves be operated upon. This offers a mode of operation that is different from the usual linguistic analysis for speaking about numbers.

[...] The symbol $3+4$ operates both as a process (addition) and a concept (the sum).

Symbols that operate dually as both process and concept in this way give rise to a new part of speech in the language of mathematics, that Gray and Tall named a *procept*. As the child relate various ways of calculating the same result, different symbols such as $7+3$, $3+7$, $13-3$ may then be reconsidered as being different ways of writing the same procept. The procept here is the number 10 and all other possible ways that an individual thinks about it to manipulate it flexibly in arithmetic. Over time it grows in richness to encompass many other connections such as $5*2$, $20/2$, $5+4+3*2$, $(-5)*(-2)$ and even $-10i^2$. Flexible use of such symbolism to derive new relationships and to build a rich structure of flexible alternatives is called *proceptual thinking*.

Mathematics Anxiety

[...] Mathematics is often considered to be a logical and coherent subject, but the successive developments in mathematical thinking may involve a particular manner of working that is supportive in one context but becomes problematic in another. [...]

This phenomenon occurs through out the long-term development of mathematics [...] Emotion enters into the development [...]. Some who make sense of mathematics at one level and feel confident about the future may enjoy tackling new problems, whereas others, who begin to feel that the mathematics does not make sense, may either take the alternative route to learn how to perform routines without attempting to understand them or, worse still, fall into a downward spiral of anxiety and failure.

Tall, David. 2013. *How Humans Learn to Think Mathematically*.
Cambridge University Press.

5. ICTと文化資源 — 動くページと深い読み書き

Ubiquity: ICTは、インタフェイスの多様化、ネットワーク化を通じて、資源化する文化の領域を拡大している。文化資源はすぐそこにある、かもしれない。

Interactivity: 文化資源化は、多様な要素・アクター間の相互作用とともに進む。印刷物との相互作用を通じて培われてきた深い読み書きの伝統は、デジタル・ネットワーク化された認知的人工物の発展とともに新しい段階を迎えつつある。

Scalability: ICTは、様々なスケールの文化資源化の可能性を開く。どのスケールにおいても「政治制度や市場経済といかに関わるか」、特にICTに対するanalog foundationsの強化が課題である。

Interdisciplinarity: デジタル・ネットワーク化された認知的人工物との相互作用は、学際的な社会連携を促進する。そこでは、ICTを活用した mathematics anxiety の克服が課題である。