Classifying by Phenomena, Theories and Methods
Examples with Focused Social Science Theories

Abstract
This paper shows how a variety of theories employed across a range of social sciences could be classified in terms of theory type. In each case, notation within the Integrated Level Classification is provided. The paper thus illustrates how one key element of the León Manifesto — that scholarly documents should be classified in terms of the theory(ies) applied can be achieved in practice.

The León Manifesto (http://www.iskoi.org/ilc/leon.htm) argues that interdisciplinary research would benefit from a universal system of document classification that classed each work in terms of the phenomena studied, the theory(ies) and theory types applied, and the method(s) applied.

Classification by phenomena, instead of disciplines, is being experimented with in the Integrative Level Classification (ILC) project (http://www.iskoi.org/ilc/) (Hong 2005). In ILC, main classes of phenomena are represented by letter codes, such as:

- s communities
- sf families
- sm tribes
- t organizations
- tn states
- tr federations
- tu supra-national unions
- u economies

Theories and methods can be expressed in the form of facets, introduced by the digit indicators 04 and 03 respectively. Thus, the subject “states studied by theory x and method y” will be notated tn04x03y. The theory facet has been the least developed element in this approach. Only a dozen grand theories have been classified (Szostak 2004). The purpose of this paper is to show that it is possible to classify documents employing narrowly focused theories. It will place theories from a variety of social science fields — some disciplinary and some interdisciplinary — into a typology, and develop ILC notation for classifying works using these theories.

1. Theories and theory types
Theories present a challenge to document classification because theory names are ambiguous: the same theory name can refer to quite different sorts of theoretical argument, while quite similar arguments may go under quite different names (especially in different disciplines). The researcher wondering if a particular theoretical argument has been applied to a particular set of phenomena will receive limited guidance if the literature is classed only with respect to theory names. The recommended solution is that works also be classified in terms of a typology of theory types (Szostak 2007, 2008).

Szostak (2004) developed a simple five-dimensional typology of theory types through recourse to one of the simplest classificatory devices: asking the 5W questions, who, what, where, when, and why. These in the context of theory yield more precise questions
(and in each case a mere handful of possible answers), which can be represented as facets 047, 046, 045, 043, 040:

046 Who is the agent? There are two immediate distinctions here: non-intentional (including volcanoes or institutions versus intentional agency (of beings that can act on purpose), each of which can take the form of individual, group, or relationship agency. This can be represented by specific classes, taking their notation from ILC main classes (extra-defined foci: see Gnoli 2006) like 046g matter, 046p persons, 046s groups, 046t institutions, 046w artifacts, etc.

043 What does the agent do? There are three broad answers: 043e passive reaction, 043i active action, 043n changes in attitude.

045 Why does the agent do this? With non-intentional agents, action can only be understood in terms of 045b their inherent nature. With intentional agents, scholars can explore the five distinct types of decision-making: 045y rational, 045i intuitive, 045p process (virtue) oriented, 045v rule-based, and 045w tradition-based. For groups and relationships, scholars can also ask how individual preferences are aggregated.

040 Where does the causal process occur? How generalizable is the theory?: there is a continuum from 040o nomothetic (highly generalizable), through 040m half generalizable, to 040k idiographic (situation- or causal-link-specific) theory.

047 When does the causal process occur? Though inspired by the temporal question ‘when?’, the possibilities refer ontologically to directions of change. There are five broad time-paths that a causal process might follow: 047b return to the original equilibrium, 047c cyclical oscillation, 047e movement to a new equilibrium, 047p change in a particular direction, or 047s stochastic/uncertain.

As the discussion above suggests, theories may occupy multiple cells in the typology. This may occur because a theory has changed through time, or because theorists have not provided clear answers to one or more of these questions.

Well-known and consolidated theories, like Classical political economy or Marxism, can be assigned a specific theory notation: sf) 04um will mean “families studied by Marxism”, while tn) 04um “states studied by Marxism”. Their characterization in terms of theory types can be recorded as a relation of dependence (Gnoli et al. 2007) on the appropriate types 047e 046s 043i etc. On the other hand, works applying innovative, not well-agreed or more narrowly focused theories can be classified only in terms of theory types: u047e046v “economies studied by theories postulating movement to a new equilibrium and institutional agents”. If the search interface is programmed appropriately (Gnoli & Hong 2006), users will be able to search for any work postulating movement towards some new equilibrium (047e): the system will retrieve both documents applying consolidated theories like Marxism (thanks to the relationship recorded in the database between 04um and 047e), and documents applying some other, less consolidated theory implying movement to a new equilibrium.

2. Methodology of this paper

A random selection of works housed in the library of European University Institute in Florence, Italy was used for this paper. A subject search in the online catalogue

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1. Bracketed notation means a common facet (Marxism as a general theory, by which any phenomenon can be studied) rather than a facet typical of the present class of phenomena (such as a specific theory of the state).
under ‘social science theories’ produced thousands of hits; the first 100 books (temporally most recent) were consulted and those that surveyed several theories in a particular field were selected. Two books were added to the sample because they were located near books being investigated and fit the search criterion. This methodology yielded five books from five distinct human science fields and with a mix of single authorship, co-authorship, and edited volumes.

The strategy for theory notation in ILC is to give each widely-used theory a unique theory code, but also classify each theory in terms of the most common theory type. Works using a less common version of the theory would receive a notation that indicated the deviation from the most common theory type. In some cases, theories do not specify answers along each of the five dimensions; applications of that theory which address that dimension would then receive additional notation for that dimension. The unique notation for each theory is provided below. The discussion highlights the most common theory type, and most typical deviations from this.

3. **Theories of Development: (Larrain 1998)**

   - **Classical Political Economy (Smith, Ricardo, Malthus)** (or more precisely “economic development according to classical political economy”, and similarly with the following theories): These theories, which formed the basis from which modern economics developed, would be expected to be similar in type to the characteristics identified for rational choice theory in Szostak (2004): individuals, action, rationality, equilibrium, and highly generalizable. Certainly, both Smith and Ricardo theorize an eventual equilibrium where all possibilities for growth are exhausted, while Malthus theorized that humanity could never raise average incomes for the masses above subsistence. In invoking trade and division of labor as major sources of economic growth, Smith especially sometimes invokes relationship agency, but this would be the major deviation.

   - **Classical Marxism:** Marx in some passages emphasized technological determinism, and in others stressed the importance of class struggle. The first is a form of non-intentional individual causation, while the latter reflects intentional group agency. The first invokes passive reaction to technological innovations. The second argument also at times assumed inevitability but at other times Marx (and especially later Marxists) stressed active action.

   Marx spoke at times of class consciousness, and thus did not neglect attitudes — though note that if the process of class conflict is assumed to be inevitable then these attitudes play no distinct causal role. When Marx assumed the inevitability of historical processes, his theory predicted the move to a new (socialist) equilibrium. When he (or his followers) allowed for historical contingency, then his theory became stochastic. At such times, his theory thus also allowed for intentional individual or relationship agency. While Marx is generally perceived as a generalist, he did at one point caution that the historical process he outlined applied only to Europe (Larrain 35).

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2. While Larrain takes a Marxian perspective, and stresses the role of class conflict in different theories, his discussion notably still provides all of the information needed for classification.

3. Of course, they also speculated on the nature of the dynamic process that would take them to this new equilibrium. Ricardo stressed both forces leading to increased incomes (innovation, trade) and to decreases in income (diminishing returns as more people worked with a fixed supply of land). He might be thought of as describing dynamic processes in particular directions.
While Marx differs along many dimensions from classical political economy, Larrain at least would stress his emphasis on class. Szostak (2004) noted that with respect to group and relationship agency one would have to classify works in terms of how individual preferences were aggregated: democratically, through negotiation, by the exercise of authority. Marx of course stresses power relationships. But the exercise of power is stressed between classes, and thus it is not always clear how decisions are made within classes. It may nevertheless be a useful addition to the typology developed in Szostak (2004) to distinguish theories of power inequalities between groups (or individuals or within relationships) from theories that assume mutually advantageous interactions.

**Classical Theories of Imperialism:** As with the classical Marxism from which most of these theories derived, most writers saw imperialism as a prelude to the inevitable collapse of capitalism, and can thus be characterized as describing the movement to a new socialist equilibrium. But some authors (especially later) stressed that socialist revolution was not inevitable and thus described a stochastic process.

Theories of imperialism stressed the role of large corporations. These supported imperialist policies in pursuit of raw materials and/or markets (different authors stressed different motives. These theories thus stressed individual intentional agency more than did classical Marxism (though Marx also talked about the relentless pursuit of profit by individual capitalists). Note that the corporation is legally an individual, though one might still wonder how exactly corporations reach decisions: writers in the Marxian tradition would stress the exercise of power within the corporation.

With respect to generalizability, early authors tended to argue that the colonized would develop in similar directions as the colonizer, but later authors doubted this.

**Modernization Theory:** Larrain speaks of three types: sociological, psychological, and economic. All three stress the inevitable movement of poor countries toward the economic, political, and cultural attributes of rich countries. They are all thus theories of change in a particular direction (though some eventual equilibrium might be imagined). Modernization theories stressed the direction of change: sociologists emphasized the breakdown of tradition, increased division of labor, increased importance of merit; psychologists emphasized achievement motivation; and economists stressed the putting in place of institutions and infrastructure that would allow economic growth. All were vague in describing the agents, actions, and decision-making processes driving modernization (though the psychological version arguably usually stressed individuals, attitudes, and perhaps rationality). All assumed generalizability.

**Theories of Worsening Terms of Trade (Prebisch):** Faced with sluggish economic growth especially in Latin America, these theories hypothesized that poor countries would not benefit from international trade as much as rich countries (due either to the fact that technological innovation would reduce the relative value of raw materials, or because rich countries protected local sources of raw materials), and urged states in poor countries to restrict trade in order to encourage domestic industrialization. The technological determinism can be treated as above as non-intentional agency. The emphasis on

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4. If a document emphasizes real phenomena such as ‘corporations’ this emphasis will be captured within the phenomena facet. If, however, a document hypothesizes theory-specific elements such as ‘colonized mentality’ these must be captured within the theory facet.
the state is a particular sort of group agency; these theories tended to assume that states would act in the interest of their population.

**Dependency Theory:** These theories built upon but also critiqued the previous theories of worsening terms of trade. Palma had identified three types of these (in Larrain 112): those that assumed underdevelopment in poor countries as inevitable, those that identified problems but eschewed inevitability, and those that stressed how internal class conflicts mediated the effects of international economic relationships. Larrain (114) instead distinguishes highly generalizable theories of inevitable underdevelopment from historical analyses which tend to stress class conflict and see development as a possible outcome. Larrain’s first type is equilibrium and generalizable and tends to stress non-intentional agency. The second type is non-generalizable, stochastic, and tends to stress group agency (and power relations between groups). But the first type also has important elements of group agency: it is often argued that elites in poor countries serve the interests of rich country capitalists rather than of poor country workers.

Both types stress the ‘exploitative’ relationships between rich countries and poor countries. Larrain is critical of the first type for often leaving the mechanisms by which this occurs vague, and compares them to modernization theory in this respect (130). The second type is diverse though it tends to emphasize the actions of classes and states.

4. **Theories of International Relations (Burchill and Linklater, 2005)**

Most but not all of the theories discussed in this book are general political theories applied to the area of international relations. Some are economic theories likewise applied, hence they take bracketed notation. The focus on international relations would be captured in the classification with respect to phenomena.

This field, like many, has intense debates regarding epistemological issues: to what extent, for example do theories ‘create’ reality rather than merely describe this? In the former case, subject components should be represented as phenomena, while in the latter, as theories and theory types. The editors do a good job of distinguishing these types of arguments from the ‘scientific’ questions of how international relations works: indeed they use quite similar terminology to Szostak (2004) in distinguishing philosophical from scientific theory. Nevertheless it is clear that theoretical discussions in the field often conflate the two, and thus that works may often need to be classified in terms of each.

Theories in international relations are most clearly distinguishable in terms of the results posited, and thus often provide only limited guidance for classifying with respect to questions other than ‘where.’ The editors stress the lack of homogeneity within the theories that they discuss.

**Liberalism:** Liberal theory stresses how free trade supports both economic growth and world peace. Recently, the advantages of universal human rights and other ‘liberal’ institutions have been stressed as well. These theories can generally be characterized as outlining change in a [desirable] direction, though some works describe a future equilibrium. Less clearly, these theories generally emphasize how institutions constrain actors. The actors of chief concern are governments themselves, or sometimes individual government leaders.

5. Szostak (2004) discusses how philosophical theories might be classified. Discussions of critical theory and postmodernism are not treated here because they are primarily philosophical in orientation.
Realism: Realism can be distinguished from liberalism primarily in being much less optimistic about the possibility of moving away from the present situation of an anarchic contest for power between states. Realist theory of international relations is thus an equilibrium theory. Like many sorts of systems theory, it is vague regarding key causal forces (though individual works may be more precise), though there is a common interest in the limited constraints on state power in the international arena.

The English School: This approach seeks a middle ground between the above two.

Marxian Approaches: In this context Marxian analysis tends to stress the nature of ‘capitalist forms of production.’ Technological determinism is key, though class relations still important.

Constructivist Theory: This stresses how ‘anarchy is what states make of it.’ That is, attitude formation is given a central role. Unlike other theories, the time path is considered less predictable (stochastic), for states have the ability to fashion different futures. Elite groups are often emphasized, though other sorts of agency are possible.

Feminist Theory: This sees merit, but also difficulties, in all of the above approaches. Individual works may thus pursue a diverse range of types of theory.

Green Theory: Once again the emphasis is on results. Green theorists hope to identify institutions or sometimes attitudes that would encourage better treatment of the environment. It thus seeks change in a particular direction.

Theories of the State (Pressman, 2006)
Theories of Industrial Relations (Muller-Jentsch, 2004)
Contemporary Social Psychological Theories Burke (2006)

Discussion
This paper has surveyed a handful of research areas in social science, and shown that the theories encountered in each can be reliably classified in terms of theory types and provided with appropriate ILC notation. Such a classification would aid researchers in identifying works that apply a particular theory type to a particular phenomenon.

In some cases, classification is rendered difficult by the vagueness with which certain theories are expressed, or by ambiguity in how a particular theory is interpreted by different theorists. Theory classification should thus act as a tool, and at the same time as a stimulus, for a more clear description and definition of theories. Authors could be encouraged to classify their own theories in terms of theory types and as compared with other existing theories. Author classification could then be overseen by classificationists to ensure that works are placed in suitable places in classification schemes.

The approach outlined in this paper, of classifying works in terms of phenomena studied and theories and theory types (and methods) applied is part of a larger model, which is described programmatically in the León manifesto (cited above). It may be that, at least for some uses, works should also be classified along other dimensions such as local viewpoint (Beghtol 1988), epoch of knowledge (Tennis 2002), application to human activity (Vickery 2008), and disciplines; ILC notation is available in each case. First experiences
with indexing bibliographies by ILC suggest that dimensions occur with different frequencies in different domains: in a natural science domain like bioacoustics, method is expressed far more frequently than theory (Gnoli et al. 2008), while the opposite seems to happen in human sciences.

More experimentation is obviously needed to assess the effectiveness and the details of this approach, as well as the expression of theories and methods in domains other than social sciences.

References


