Discussion of globalization today is mainly economic, referring to the transnational markets for goods, capital and labour. By contrast, the spread of knowledge — such as new technology or ideas — is considered to be a separate process. However, globalization has occurred throughout human history, involving knowledge in a significant way. The present situation is the result of historical processes that include economics, politics, technological advances and sociocultural changes.

Investigating the role of knowledge in these historical processes has many valuable implications for our understanding of current globalization processes and their future development, including, for example, whether the economy of knowledge will be subject to control by other globalization processes or whether its autonomy — and its potential for steering such processes — will be strengthened.

THE DYNAMICS OF GLOBALIZATION

There is an inherent contradiction within globalization processes: although they can lead to homogeneity and standardization of culture, they can also provoke diverse coping strategies that create, in effect, more complexity. This contrast indicates the important mediating role that national and regional institutions play in the implementation of global processes. It further shows that globalization is, in fact, a dynamic process that involves the interaction of various layers, such as population migration, technological spread, dissemination of religious ideas and the emergence of multilingualism — each of which has its own dynamics and history.

Goods, tools, ideas and technical skills circulate among human groups with different rates of diffusion, but typically faster than languages, traditional rituals, ideologies or administrative and political institutions, indicating the crucial role of knowledge in these processes. For example, goods and the technologies that are required to produce them often spread independently. Successful transfer of knowledge regarding the production of tools requires at least linguistic capabilities. Thus, multilingualism, which is a characteristic of ancient scribal cultures, becomes understandable as another critical factor in globalization processes and even as an indicator of cultural sophistication. Its importance can be seen in the earliest lexicographical literature, which contain glossaries and tools to aid communication, and might be considered prerequisites for further globalization.

A NONLINEAR PROCESS

These prerequisites do not necessarily imply, however, that there is a mechanical progression of processes in globalization; for instance, the globalization of markets does not necessarily imply a globalization of the political system. Rather, the interaction between the various layers might lead to different outcomes, as illustrated by the different ways in which religious and political ideas of order are incorporated in Buddhism and Confucianism, the ways in which knowledge constitutes identity and authority in different historical settings, and the ways in which ideas gain and lose authority.

The common factor in these layers of the globalization process is knowledge. On the political level, education is considered to be critical in order to master the challenges of globalization and address the tensions between its different layers. Yet knowledge is more than simply an aspect of globalization as a precondition and consequence: it is a critical element of its development. The globalization of knowledge as a historical process with its own dynamics orchestrates the interaction of all the underlying layers. The globalization of knowledge is not only a relatively autonomous process but also profoundly influences all other globalization processes — including the formation of markets — by shaping the identity of its actors and its critics.

EXTRINSIC VERSUS INTRINSIC

There are intrinsic and extrinsic dynamics at work within knowledge development that interact and complement each other, creating positive-feedback loops. Extrinsic dynamics include ecological, economic, cultural and political circumstances, whereas intrinsic dynamics consist of self-referential improvements of a knowledge system that give rise to an increasingly complex knowledge architecture. Intrinsic and extrinsic developments might be closely intertwined: an extrinsic development, such as colonizing a new area, might depend on intrinsic knowledge achievements, such as advancing astronomy or navigation techniques.

There is also interplay between global and local knowledge traditions. All knowledge traditions start as local knowledge with a specific context, group, range and history. Globalization of local knowledge involves both intrinsic and extrinsic developments, potentially enhancing social dominance, range of application and degree of reflexivity, or, alternatively, destroying autonomy and reducing complexity. Consequently, this globalization process should be perceived as a cross-over phenomenon. In addition, the globalization of...
Globalization processes have been ongoing for millennia and involve knowledge in significant ways.

Globalization is not a linear progression, but rather a dynamic process that involves both intrinsic and extrinsic factors, and is heavily influenced by local and regional conditions.

The study of the spread of knowledge crosses disciplinary boundaries, and requires a new theoretical language to describe it.

Local knowledge is typically accompanied by a localization, recontextualization and restructuring of global knowledge. More than simply being applied to a new situation, global knowledge has thus, in fact, become transformed.

**STUDYING KNOWLEDGE**

There are two reasons for the lack of a systematic account of the globalization of knowledge: first, the sheer volume and diversity of the data needed; and second, the absence of a common framework for describing types and transfer processes of knowledge. Overcoming the first of these problems requires the establishment of a global research network. The second requires the development of a new, expressively rich yet structurally simple theoretical language. Such a framework will necessarily encompass cognitive science, philosophy, epistemology, anthropology, archaeology, historical disciplines and the social sciences; it must include the full range of developmental processes implicated in the global spread of knowledge throughout history. It will also need a typology of knowledge forms, knowledge-representational structures and knowledge-transfer processes. No existing academic discipline provides all of the tools required.

It will be possible to understand and validate the role of knowledge in globalization processes only if the issue of knowledge is specifically taken up by researchers within individual projects, revisiting their findings from these new perspectives. Researchers should systematically answer certain types of question. For instance, what was the awareness that exchange partners in a globalization process had about the limitations of their knowledge of each other and of the exchange?

The hope is that with an overarching conceptual framework, such as that outlined here, it will be possible to identify the theoretical challenges and to help solve the problems of the current and future processes of the globalization of knowledge.