

The background of the book cover features a high-contrast, black and white photograph. It depicts a close-up of a microscope's stage and objective lenses, with a metric ruler placed diagonally across the scene. The ruler has markings in centimeters and millimeters. The overall aesthetic is technical and precise, reflecting the theme of standardization.

**GLOBAL INSTITUTIONS**



# **The International Organization for Standardization (ISO)**

Global governance through voluntary consensus

**Craig N. Murphy and JoAnne Yates**



# The International Organization for Standardization (ISO)

*The International Organization for Standardization (ISO)* is the first full-length study of the largest non-governmental, global regulatory network whose scope and influence rivals that of the UN system.

Much of the interest in the successes and failures of global governance focuses around high-profile organizations such as the United Nations, World Bank, and World Trade Organization. This volume is one of few books that explore both the International Organization for Standardization's (ISO) role as a facilitator of essential economic infrastructure and the implication of ISO techniques for a much wider realm of global governance.

Through detailing the initial rationale behind the ISO and a systematic discussion of how this low-profile organization has developed, the authors provide a comprehensive survey of the ISO as a powerful force in the way commerce is conducted in a changing and increasingly globalized world.

**Craig N. Murphy** is M. Margaret Ball Professor of International Relations at Wellesley College. He is past president of the International Studies Association, past chair of the Academic Council on the UN System, and a founding editor of the international public policy journal *Global Governance*.

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# **Routledge Global Institutions**

Edited by Thomas G. Weiss

*The CUNY Graduate Center, New York, USA*

and Rorden Wilkinson

*University of Manchester, UK*

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# Foreword

The current volume is the thirty-second in a dynamic series on “global institutions.” The series strives (and, based on the volumes published to date, succeeds) to provide readers with definitive guides to the most visible aspects of what many of us know as “global governance.” Remarkable as it may seem, there exist relatively few books that offer in-depth treatments of prominent global bodies, processes, and associated issues, much less an entire series of concise and complementary volumes. Those that do exist are either out of date, inaccessible to the non-specialist reader, or seek to develop a specialized understanding of particular aspects of an institution or process rather than offer an overall account of its functioning. Similarly, existing books have often been written in highly technical language or have been crafted “in-house” and are notoriously self-serving and narrow.

The advent of electronic media has undoubtedly helped research and teaching by making data and primary documents of international organizations more widely available, but it has also complicated matters. The growing reliance on the Internet and other electronic methods of finding information about key international organizations and processes has served, ironically, to limit the educational and analytical materials to which most readers have ready access—namely, books. Public relations documents, raw data, and loosely refereed web sites do not make for intelligent analysis. Official publications compete with a vast amount of electronically available information, much of which is suspect because of its ideological or self-promoting slant. Paradoxically, a growing range of purportedly independent web sites offering analyses of the activities of particular organizations has emerged, but one inadvertent consequence has been to frustrate access to basic, authoritative, readable, critical, and well-researched texts. The market for such has actually been reduced by the ready availability of varying quality electronic materials.

For those of us who teach, research, and practice in the area, such limited access to information has been particularly frustrating. We were delighted when Routledge saw the value of a series that bucks this trend and provides key reference points to the most significant global institutions and issues. They are betting that serious students and professionals will want serious analyses. We have assembled a first-rate line-up of authors to address that market. Our intention, then, is to provide one-stop shopping for all readers—students (both undergraduate and postgraduate), negotiators, diplomats, practitioners from non-governmental and intergovernmental organizations, and interested parties alike—seeking information about the most prominent institutional aspects of global governance.

### **The International Organization for Standardization**

Much of the interest in what we commonly know as global governance is focused on the successes and failures of the United Nations (UN) and the principal economic institutions of the International Monetary Fund (IMF),<sup>1</sup> World Bank,<sup>2</sup> and World Trade Organization (WTO).<sup>3</sup> This attention, however, belies a more intimate and creeping process of globalization engendered by a series of relatively unknown global institutions overseeing largely functional tasks. Indeed, we can learn much (and potentially much more) about global governance by exploring those institutions that are relatively hidden from public view but which perform tasks that governments not only agree to but which have a real impact on everyday life, than we can from their “headline” counterparts. The Bank for International Settlements (BIS), for instance, works to harmonize national and international banking systems by bringing together 55 central banks. Yet, the organization is virtually invisible and has certainly not been subject to the kind of public protests encountered by its more familiar economic counterparts—the IMF and World Bank. Similarly, the World Organization for Animal Health (the OIE—formerly the Office International des Epizooties, hence the acronym), although a key player in national and international standard setting in animal health and disease prevention and a partner organization of the WTO, does not attract the kind of attention that the World Trade Organization has “enjoyed.” The same can be said of the organization that is the subject of this book: the International Organization for Standardization (ISO)—a key player in assisting the advance of industrialization as well as shaping patterns of production and consumption, but a relatively hidden institution nonetheless.

The ISO is a non-governmental institution (albeit one that was established under the aegis of the UN) bridging public and private sectors and is the self-proclaimed international standard setter for “business, government and society,” through its pursuit of voluntary standards. The organization boasts having developed more than 17,000 international standards in its 60-year history and claims that it is engaged in producing an additional 1,100 standards each year. These standards range from those dealing with size, clarity, and weights of jewelry through clothing measures to the systems businesses ought to put in place to enhance customer satisfaction. Its work thus has an intimate impact on daily life by shaping and molding the way in which commerce is conducted, the operating procedures of business, and the way in which consumers engage with markets.

The story of the ISO is not, however, merely one associated with its development since its founding in 1946 (operational from 1947). It draws on a long tradition of standard setting that was crucial to the advance of industrialization in the nineteenth century. Some of this standard setting was the result of government and business agreement on product development; others were the consequence of commercial battles fought out over the most appropriate format for such items as video recorders and the like; others still were intimately connected with the spread of imperialism such as the standardization of railway gauges, the operational language of air traffic control, and the way in which we measure time (by the hour as well as by the day, week, and year).

To write this book we needed authors who intimately understood both standard setting and global governance. We knew of the perfect partnership in Craig Murphy and JoAnne Yates. Craig Murphy, currently M. Margaret Ball Professor of International Relations at Wellesley College, is a leading authority and has written extensively on global governance, including an unusual optic that begins in 1850 and not the 1990s.<sup>4</sup> He is one of the very few scholars to have explored in detail the connections between international institutionalization and industrialization. His recent work on standard setting is a natural extension of this work. He is author and editor of, among other things, some of the most influential books in the theory and practice of international relations,<sup>5</sup> including his recent masterful history of the United Nations Development Programme.<sup>6</sup>

JoAnne Yates, Sloan Distinguished Professor of Management at the Sloan School of Management, Massachusetts Institute of Technology, is one of the world’s leading experts in communication and information technology. She is author and editor of, among other things, several of the leading texts that are widely used in business schools.<sup>7</sup>

We could not have found two authors better placed to write this intriguing volume. What follows is an account not only of the development of the international organization of standard setting but of the politics and political economy of commercial and state rivalry. It is a first-rate work and one that should be read by all interested in global governance. We are persuaded that readers will enjoy the volume as much for its engaging style as for its content.

As always, we look forward to comments from first-time or veteran readers of the Global Institutions series.

Thomas G. Weiss, The CUNY Graduate Center, New York, USA  
Rorden Wilkinson, University of Manchester, UK  
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# Abbreviations

AFNOR	Association Française de Normalisation
ANAB	ANSI-ASQ National Accreditation Board
ANSI	American National Standards Institute
ASA	American Standards Association
ASQ	American Society for Quality
BBC	British Broadcasting Corporation
BIPM	Bureau International des Poids et Mesures
BSI	British Standards Institute
CASCO	Committee on Conformity Assessment
CEN	European Committee for Standardization
GATT	General Agreement on Tariffs and Trade
GMO	Genetically Modified Organism
IAF	International Accreditation Forum
ICC	Interstate Commerce Commission
IEC	International Electrotechnical Commission
IETF	Internet Engineering Task Force
ILAC	International Laboratory Accreditation Cooperation
ILO	International Labor Organization
ISA	International Federation of National Standardization Associations
ISO	International Organization for Standardization
IT	information technology
ITU	International Telecommunication Union
JISC	Japan Industrial Standards Committee
MDGs	Millennium Development Goals
MIT	Massachusetts Institute of Technology
NEN	Nederlands Normalisatie-instituut
NEDCO	Committee for the study of the Netherlands' statement concerning ISO liaisons and activities
NGO	non-governmental organization

OECD	Organization for Economic Cooperation and Development
OIML	International Organization of Legal Metrology
OSI	Open Systems Interconnection
SA	Standards Australia
SIS	Swedish Standards Institute
TC	Technical Committee
TMB	Technical Management Board
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNSCC	United Nations Standards Coordinating Committee
USA	United States of America
W3C	World Wide Web Consortium
WHO	World Health Organization
WTO	World Trade Organization



# Introduction

This book is about the International Organization for Standardization (usually just called “ISO,” which is often treated as a word, not as an acronym<sup>1</sup>) and related organizations including its international predecessors and the International Electrotechnical Commission (IEC, founded in 1906 and considered an autonomous part of ISO since its founding in 1946) as well as the larger principle of “voluntary consensus standard setting” which all of them embody.

ISO and its predecessors began as facilitators of agreements on industrial standards, “nuts and bolts” issues, including the technical specifications of actual bolts, screws, and nuts! Such agreements provide necessary infrastructure for the increasingly global industrial economy. As one of the figures in the early twentieth-century global standards movement, Paul G. Agnew, the head of the major industrial standards body in the United States of America, put it:

In the flow of products from farm, forest, mine, and sea through processing and fabricating plants, and through wholesale and retail markets to the ultimate consumer, most difficulties are met at the transition points—points at which the product passes from department to department within a company, or is sold by one company to another or to an individual. The main function of standards is to facilitate the flow of products through these transition points. Standards are thus both facilitators and integrators. In smoothing out points of difficulty, or “bottlenecks,” they provide the evolutionary adjustments which are necessary for industry to keep pace with technical advances.<sup>2</sup>

Agnew believed that standard setting was key to the healthy development of industrial economies. Some admirers of standard setting made even grander claims. They argued that the voluntary consensus

## 2 *Introduction*

process that ISO and its predecessors employed could solve many difficult problems of governance, leading to improvements in health, public safety, the conditions of labor, and the like. The process uses committees composed of professional engineers, employees of government agencies, and representatives of companies that produce and companies that purchase specific products or services to come to consensus over standards that future producers can choose to adopt or reject.

Champions of the process believe that its openness, as well as its aim of achieving solutions that are “scientific” or “technical” rather than “political,” assures the legitimacy of the resulting standards, and, hence, their widespread adoption. In 1920, the Fabian social theorists Sidney and Beatrice Webb wrote that it was “impossible to over-rate the importance in the control of industry of this silent but all-pervading determination of processes.” They hoped for the “further development” of such organizations in “the public service.”<sup>3</sup> Ten years later, Alfred Zimmern, the holder of the world’s first chair in international politics, imagined similar processes solving many of the seemingly intractable problems of international governance faced by the failing League of Nations.<sup>4</sup>

This same argument has also been heard much more recently. In 2000, Harland Cleveland, past-president of the American Society of Public Administration and a dogged advocate of United Nations (UN) reform since the UN’s very beginning, argued that the ISO’s processes provide the germ of a consultative, “nobody-in-charge” global society that could greatly expand human freedom.<sup>5</sup> Two years later, the World Bank’s vice president for Europe, Jean-François Rischard, published a lively book that called for solving the world’s 20 most urgent global problems, from global warming to falling labor standards, by applying ISO’s voluntary consensus process.<sup>6</sup>

ISO has, in fact, taken on some of the tasks that have proven too difficult for the League of Nations or the UN. These include environmental regulation, where the voluntary ISO standard, ISO 14000, may have had more impact than any of the UN-sponsored agreements of the 1990s), and questions of corporate responsibility for human rights (including core labor rights), where the new ISO 26000 could prove more successful than the UN-sponsored Global Compact.

This book explores both ISO’s role as a facilitator of essential technical infrastructure (“this silent but all-pervading process”) for the global economy and the future of ISO in a changing and increasingly globalized world.

We begin, in Chapter 1, with the emergence and early significance of this unusual social institution of voluntary consensus standard setting.

ISO was formed in 1946 by a relatively small group of key individuals—most of them engineers, the most prominent of them British and American—who had been concerned with standard setting throughout the first half of the century. These engineers had also played important roles in establishing their countries' national standards bureaus and non-governmental standards bodies as well as international bodies including the IEC and ISO's League-era and wartime "United Nations" (i.e. the "Allied nations") predecessors. The chapter outlines ISO's entire history and focuses on these people and their work through the early 1960s when the number of fields in which ISO "technical committees" (the multi-stakeholder bodies in which standards are negotiated) functioned began growing steadily, and ISO's membership rapidly increased.

Chapter 2 focuses on ISO's operation, on how standards are set. It identifies the whole range of actors involved in the global network of voluntary consensus standard setting and identifies where power within ISO tends to lie. It considers the general reasons that parties become involved in ISO's work and explains how ISO's work is funded. Finally, it explains how—despite the fact that ISO's standards are "voluntary"—most of them end up being enforced by market pressure or by the ways in which national laws and intergovernmental treaties make reference to international voluntary standards.

Chapter 3 considers the central role that ISO has played in contemporary economic globalization. ISO's standards for shipping containers assured the development of a technology that was necessary to today's global commodity chains in almost all fields of manufacturing: today's economy would not be possible without inexpensive transoceanic shipping and that, in turn, depended on ISO standards.

The current wave of economic globalization encouraged ISO's slow but steady movement into fields far removed from its original concern with "nuts and bolts," the focus of Chapter 4. The new fields include work processes (ISO 9000's "quality management" standards), environmental regulation (ISO 14000), and corporate social responsibility (ISO 26000).

Chapter 5 reflects on ISO's future in a world in which industrial standards are increasingly contentious and difficult to create due to the speed of technological innovation and the extent of the interconnections within the global economy. ISO standards played a role in the creation of today's lead industries—they helped shape the way in which information technology has been developed since the 1980s—but the lengthy voluntary consensus process cannot keep up with the pace of innovation. Governments and intergovernmental bodies have tried to

## 4 *Introduction*

gain advantage by setting some standards more quickly than the ISO process, and many engineers who are concerned with maintaining relatively open access to new technologies, have embraced the “Open Source” movement—a new approach to intellectual property that addresses some of the issues addressed by standard setters in the past.

In the book’s conclusion, we point out that ISO is likely to remain at the center of the global political economy throughout this century, but that its primary role may have shifted. ISO’s work in the fields of corporate social responsibility and quality management, broadly conceived, will be joined to work in maintaining and updating standards in all established industrial fields, but the original problems that were solved by voluntary consensus standard setting—the standard’s issues in the leading-edge technologies—are likely to be dealt with by other means.