

**Research in the Sociology of Organizations**  
Volume 29

# Technology and Organization: Essays in Honour of Joan Woodward

**Nelson Phillips  
Graham Sewell  
Dorothy Griffiths**  
Editors

RESEARCH IN THE SOCIOLOGY OF ORGANIZATIONS  
VOLUME 29

# TECHNOLOGY AND ORGANIZATION: ESSAYS IN HONOUR OF JOAN WOODWARD

EDITED BY

**NELSON PHILLIPS**

*Imperial College Business School, London, UK*

**GRAHAM SEWELL**

*University of Melbourne, Australia*

**DOROTHY RILEY**

*Imperial College Business School, London, UK*



United Kingdom – North America – Japan  
India – Malaysia – China

**Emerald Group Publishing Limited**  
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2010

Copyright © 2010 Emerald Group Publishing Limited

**Reprints and permission service**

Contact: [booksandseries@emeraldinsight.com](mailto:booksandseries@emeraldinsight.com)

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. No responsibility is accepted for the accuracy of information contained in the text, illustrations or advertisements. The opinions expressed in these chapters are not necessarily those of the Editor or the publisher.

**British Library Cataloguing in Publication Data**

A catalogue record for this book is available from the British Library

ISBN: 978-1-84950-984-8

ISSN: 0733-558X (Series)



Awarded in recognition of  
Emerald's production  
department's adherence to  
quality systems and processes  
when preparing scholarly  
journals for print



INVESTOR IN PEOPLE

## PREFACE

When Joan Woodward died in 1971 at the age of 54, she left behind an enormous professional and personal legacy. This volume is a tribute to her work and life, to the profound effect she had on those she worked with, and to the important impact her work has had on how we think about organizations. It is also a tribute to a woman who succeeded in what was, at the time, overwhelmingly a man's world. That she was only the second woman appointed as a full professor at Imperial College London provides ample evidence of her success in the unlikely and very masculine setting of post-war Britain.

To reflect on both her life and her work, we have brought together a diverse group of contributors. Some, such as Sandra Dawson and Lisle Klein, knew and worked with her in 1960s; others, such as Charles Perrow and Bob Hinings, were involved in the same streams of research and in the development of what we now know of as contingency theory; whereas others, such as Sandra Kaplan and Wanda Orlikowski, continue to push ahead with the research agenda focusing on links between technology and organization pioneered by Joan.

The idea for this volume arose out of one of Joan's many legacies at Imperial College. Shortly after her death, the friends and colleagues of Joan Woodward established a fund to bring scholars of international renown to Imperial to give a biannual lecture on some topic related to technology and organization studies. The Joan Woodward Lecture has been given by many eminent scholars over the past 30 years and, while at a dinner following the most recent lecture given by Steve Barley, Dot Griffiths brought up the idea of commemorating Joan's profound impact on our thinking about organizations. This would involve contributions by people who knew her personally and worked with her directly combined with the reflections of eminent scholars whose own work has been deeply influenced by Joan's watershed studies. The general response to the idea was overwhelmingly positive, and after an animated discussion and several glasses of wine at a South Kensington restaurant, the idea of this volume was born.

The idea went through a number of iterations before the current format was decided upon. The volume contains four sections. It begins with an introduction in which we provide some background on Joan's life and

summarize the main themes in her work. We have written this as an overview to explain her contribution and also give some sense of how impressive her contribution was given the context in which she worked. In the second section, a number of people who worked with her provide very personal reflections and describe the time they worked with her. These reflections are fascinating, both in understanding Joan as a person and also in providing compelling pictures of organization theory research at that time. In the third section, we bring together a set of chapters that build on Joan's work. These chapters are all original contributions by leading scholars that continue her legacy of considering the connection between technology and organization. Finally, in the fourth section, we have included a number of essays discussing trends and future themes in technology and organization. Combined, the four sections provide an overview of Joan's work and life, exemplary work extending her legacy, and some ideas of where the field is headed in the future.

As always with projects of this sort, a number of people have been of tremendous help in putting together this volume. First of all, we thank all the authors who put so much time and energy into their chapters. Without their enthusiasm, hard work, and patience, the volume would not have been possible. Second, we thank Michael Lounsbury, the series editor, for all his help and support. He was very enthusiastic about the idea from the beginning, and his assistance as an editor and an author is much appreciated. Third, we thank our editor at Emerald, Rebecca Forster, for all her help in guiding us through the process. Finally, we thank Donna Sutherland-Smith for all her help in proofreading chapters, managing permissions forms, and all the other things she did to keep the process running and get the chapters in shape. Her help was essential to the successful completion and final quality of this volume.

Putting this volume together was an incredible experience for us. Revisiting Joan's life and work through her contemporaries was moving and poignant. But coming to understand her achievements as a scholar and her impact on our understanding of organizations and the importance of technology was also hugely inspiring. Joan was, above all, a scholar, and understanding her approach and contribution highlighted the possibilities and importance and innovative scholarship about organizations. We hope you will find this volume interesting and trust that it will help to inspire future generations of organizational theorists to continue to develop our understanding of technology and organizations.

Nelson Phillips  
Graham Sewell  
Dorothy Griffiths  
*Editors*

## LIST OF CONTRIBUTORS

<i>Shahzad Ansari</i>	Judge Business School, University of Cambridge, Cambridge, UK
<i>Adam J. Bock</i>	Imperial College Business School, London, UK
<i>Anna Canato</i>	IÉSEG School of Management Lille, La Defense, France
<i>Andrew Davies</i>	Imperial College Business School, London, UK
<i>Sandra Dawson</i>	Cambridge Judge Business School and Sidney Sussex College, University of Cambridge, Cambridge, UK
<i>Graham Dover</i>	Simon Fraser University, Vancouver, BC, Canada
<i>Lars Frederiksen</i>	Imperial College Business School, London, UK
<i>Annabelle Gawer</i>	Imperial College Business School, London, UK
<i>Gerard George</i>	Imperial College Business School, London, UK
<i>Royston Greenwood</i>	University of Alberta, Edmonton, AB, Canada
<i>Dorothy Griffiths</i>	Imperial College Business School, London, UK
<i>Cynthia Hardy</i>	University of Melbourne, Parkville, VIC, Australia

<i>C. R. (Bob) Hinings</i>	University of Alberta, Edmonton, AB, Canada
<i>P. Devereaux Jennings</i>	University of Alberta, Edmonton, AB, Canada
<i>Sarah Kaplan</i>	Rotman School, University of Toronto, Toronto, Canada
<i>Lisl Klein</i>	The Bayswater Institute, London, UK
<i>Thomas B. Lawrence</i>	Simon Fraser University, Vancouver, BC, Canada
<i>Michael Lounsbury</i>	University of Alberta, Edmonton, AB, Canada
<i>Kamal Munir</i>	Judge Business School, Cambridge University, Cambridge, UK
<i>Fiona Murray</i>	MIT Sloan School of Management, Cambridge, MA, USA
<i>Wanda J. Orlikowski</i>	MIT Sloan School of Management, Cambridge, MA, USA
<i>Markus Perkmann</i>	Imperial College Business School, London, UK
<i>Charles Perrow</i>	Yale University, New Haven, CT, USA
<i>Nelson Phillips</i>	Imperial College Business School, London, UK
<i>Davide Ravasi</i>	Università Bocconi, Milan, Italy
<i>Graham Sewell</i>	Department of Management and Marketing, University of Melbourne, Melbourne, VIC, Australia
<i>André Spicer</i>	Warwick Business School, University of Warwick, Coventry, UK
<i>Jennifer Whyte</i>	University of Reading, Reading, UK
<i>Tyler Wry</i>	University of Alberta, Edmonton, AB, Canada

# ADVISORY BOARD

## SERIES EDITOR

Michael Lounsbury  
*Alex Hamilton Professor of Business,  
University of Alberta School of Business, and  
National Institute for Nanotechnology, Edmonton, Alberta, Canada*

## ADVISORY BOARD

Howard E. Aldrich  
*University of North Carolina, USA*

Stephen R. Barley  
*Stanford University, USA*

Nicole Biggart  
*University of California at  
Davis, USA*

Elisabeth S. Clemens  
*University of Chicago, USA*

Barbara Czarniawska  
*Göteborg University, Sweden*

Gerald F. Davis  
*University of Michigan, USA*

Marie-Laure Djelic  
*ESSEC Business School, France*

Frank R. Dobbin  
*Harvard University, USA*

Royston Greenwood  
*University of Alberta, Canada*

Mauro Guillen  
*The Wharton School, University of  
Pennsylvania, USA*

Paul M. Hirsch  
*Northwestern University, USA*

Renate Meyer  
*Vienna University of Economics  
and Business Administration,  
Austria*

Mark Mizruchi  
*University of Michigan, USA*

Walter W. Powell  
*Stanford University, USA*

Hayagreeva Rao  
*Stanford University, USA*

Kerstin Sahlin-Andersson  
*Uppsala University, Sweden*

W. Richard Scott  
*Stanford University, USA*

Robin Stryker  
*University of Minnesota, USA*

Haridimos Tsoukas  
*ALBA, Greece*

Richard Whitley  
*University of Manchester, UK*



# CONTENTS

LIST OF CONTRIBUTORS	<i>ix</i>
ADVISORY BOARD	<i>xi</i>
PREFACE	<i>xiii</i>

## SECTION 1 – INTRODUCTION

INTRODUCTION: JOAN WOODWARD AND THE STUDY OF ORGANIZATIONS <i>Graham Sewell and Nelson Phillips</i>	<i>3</i>
---	----------

## SECTION 2 – PERSONAL REFLECTIONS ON JOAN WOODWARD

JOAN WOODWARD: A PERSONAL MEMORY <i>Dorothy Griffiths</i>	<i>23</i>
FROM MEDIEVAL HISTORY TO SMASHING THE MEDIEVAL ACCOUNT OF ORGANIZATIONS <i>Charles Perrow</i>	<i>25</i>
JOAN WOODWARD: A STYLE FIT FOR THE TASK <i>Sandra Dawson</i>	<i>29</i>
WORKING WITH JOAN WOODWARD <i>Lisl Klein</i>	<i>35</i>

<b>THE CONTRIBUTION OF JOAN WOODWARD: A PERSONAL REFLECTION</b> <i>C. R. (Bob) Hinings</i>	41
 <b>SECTION 3 – STUDIES IN TECHNOLOGY AND ORGANIZATION</b>	
<b>WE ARE WHAT WE DO (AND HOW WE DO IT): ORGANIZATIONAL TECHNOLOGIES AND THE CONSTRUCTION OF ORGANIZATIONAL IDENTITY</b> <i>Davide Ravasi and Anna Canato</i>	49
<b>LETTING USERS INTO OUR WORLD: SOME ORGANIZATIONAL IMPLICATIONS OF USER-GENERATED CONTENT</b> <i>Shahzad Ansari and Kamal Munir</i>	79
<b>ENTREPRENEURSHIP AND THE CONSTRUCTION OF VALUE IN BIOTECHNOLOGY</b> <i>Sarah Kaplan and Fiona Murray</i>	107
<b>INSTITUTIONAL SOURCES OF TECHNOLOGICAL KNOWLEDGE: A COMMUNITY PERSPECTIVE ON NANOTECHNOLOGY EMERGENCE</b> <i>Tyler Wry, Royston Greenwood, P. Devereaux Jennings and Michael Lounsbury</i>	149
<b>PROJECT-BASED INNOVATION: THE WORLD AFTER WOODWARD</b> <i>Andrew Davies and Lars Frederiksen</i>	177
<b>TAKING TIME TO UNDERSTAND: ARTICULATING RELATIONSHIPS BETWEEN TECHNOLOGIES AND ORGANIZATIONS</b> <i>Jennifer Whyte</i>	217

## **SECTION 4 – SHORT ESSAYS IN TECHNOLOGY AND ORGANIZATION**

<b>TECHNOLOGY AND ORGANIZATION: CONTINGENCY ALL THE WAY DOWN</b> <i>Wanda J. Orlikowski</i>	<b>239</b>
<b>TEXTUALIZING TECHNOLOGY: KNOWLEDGE, ARTIFACT, AND PRACTICE</b> <i>Cynthia Hardy</i>	<b>247</b>
<b>TECHNOLOGY, INSTITUTIONS, AND ENTROPY: UNDERSTANDING THE CRITICAL AND CREATIVE ROLE OF MAINTENANCE WORK</b> <i>Graham Dover and Thomas B. Lawrence</i>	<b>259</b>
<b>WHAT ARE BUSINESS MODELS? DEVELOPING A THEORY OF PERFORMATIVE REPRESENTATIONS</b> <i>Markus Perkmann and André Spicer</i>	<b>265</b>
<b>THE ROLE OF STRUCTURED INTUITION AND ENTREPRENEURIAL OPPORTUNITIES</b> <i>Gerard George and Adam J. Bock</i>	<b>277</b>
<b>THE ORGANIZATION OF TECHNOLOGICAL PLATFORMS</b> <i>Annabelle Gawer</i>	<b>287</b>

# **SECTION 1 – INTRODUCTION**



# INTRODUCTION: JOAN WOODWARD AND THE STUDY OF ORGANIZATIONS

Graham Sewell and Nelson Phillips

The problem of welding an enterprise into an integrated whole varies with the amount and kinds of differentiation of its parts and with the kinds of relationship which the technological process requires; that is, different kinds of heterogeneity call for different ways of homogenizing. The technology appropriate to a particular purpose not only determines in an important way the extent and type of differentiation but also determines the amount of coordination and cooperation required and the locus of responsibility for these.

– Thompson and Bates (1957, p. 338)

It is fitting to commence a volume dedicated to the legacy of Joan Woodward with a theoretical proposition that, by the time James Thompson and Frederick Bates were writing in 1957, she had already worked through systematically in an empirical setting. The initial findings of Joan's famous study of the organizational structure of manufacturing firms in South East Essex were contained in a modest 40-page pamphlet, *Management and Technology*, published in 1958 by the UK's Department of Scientific and Industrial Research. This amply demonstrates how advanced her thinking was in global terms at a time when "administrative science" was in its infancy in the United Kingdom.<sup>1</sup>

Although she is now best remembered for the 1965 book, *Industrial Organization: Theory and Practice*, this 1958 volume had already exerted a

---

Technology and Organization: Essays in Honour of Joan Woodward  
Research in the Sociology of Organizations, Volume 29, 3–20  
Copyright © 2010 by Emerald Group Publishing Limited  
All rights of reproduction in any form reserved  
ISSN: 0733-558X/doi:10.1108/S0733-558X(2010)0000029005

considerable influence on key US scholars by the time *Industrial Organization* appeared. In an era where research is widely available almost at the moment it is written, we can all too easily underestimate the rapidity with which ideas were exchanged in the 1950s but, even with this caveat, it seems remarkable that such an apparently parochial report (South East Essex hardly being the powerhouse of the mid-twentieth-century industrialized world!) should reach such a select and influential audience so quickly. Charles Perrow's fascinating personal recollections in this volume recalling how he came into contact with Joan sheds some light on how this influence spread, but this introductory chapter is less concerned with such path dependencies and more concerned with the "What?" and "Why?" of her legacy.

The first thing we should remember when considering Joan's career is how limited the opportunities were for those who wished to work in the British university sector in the immediate post-war period. Long before the Robbins report of 1963 had recommended the massive expansion of the sector, higher education was an exclusive pursuit for a small number of (usually male) students and academics. Despite this exclusivity, Joan secured an academic post at the University of Liverpool between 1948 and 1953 where, as a member of the Department of Social Science, she conducted research on employment relations in various settings such as hospitals, docks, and shops. As Charles Perrow notes in his personal reflection, this was an unusual change in direction for someone who was previously a classics scholar! Nevertheless, this early research resulted in a number of publications that have been overshadowed by her subsequent work, although her 1960 book, *The Saleswoman*, is a pioneering but neglected study of employment in the service sector. At Liverpool she also came into contact with industrial relations scholars like Tom Lupton who were conducting their own ground-breaking work on the shopfloor effects of technical change, and this explicitly influenced her thinking in her later study of South East Essex (Woodward, 1965).

After Liverpool she moved on to the South East Essex Technical College where she headed the Human Relations Research Unit from 1953 to 1957. We return to her activities in Essex in the next section, as these form the crucial period of data gathering and analysis that later became so influential. For now we simply note that this was a staging post in a career that ended with a chair in industrial sociology at Imperial College of Science and Technology (then part of the University of London, although it has recently received its own Royal Charter as an independent degree awarding institution). In the late 1950s Imperial College was, demographically speaking, overwhelmingly male and Joan was only the second woman to

hold a chair at this prestigious institution. While at Imperial College, Joan also lectured at the Oxford University Delegacy for Social Administration – a delegacy being a vehicle used by Oxford to incorporate new activities and emerging disciplines in a sort of “semi-detached” way until they were able to command wider acceptance by the university’s more conservative elements.

The personal recollections of Joan’s life and work contained in this volume all speak of the great loss felt among her friends and colleagues as she succumbed to illness in 1971. Talking to these people, even now there is still a palpable sense of collective bereavement. However, in this volume we wish to celebrate Joan’s life and work; a legacy that lives on as each subsequent generation of organizational sociologist learns of her influence for the first time (we note that she is still included – along with people of the stature of Frederick W. Taylor, Max Weber, Elton Mayo, and Herbert Simon – in the most recent edition of Derek Pugh and David Hickson’s *Great Writers on Organizations*). To be sure, not everything that Joan originally propounded back in the 1950s as part of the turn to the “technological imperative” in organizational sociology has stood the test of time (see Harvey, 1968; Mohr, 1971; Child & Mansfield, 1972). But, as we and the other authors in this volume argue, there is still much to be gained from a critical engagement with her work.

Thus, in the rest of this chapter, we set out our case for the continued relevance of Joan’s work. We begin by looking at the initial reception of *Industrial Organization: Theory and Practice* before going on to examine how the main findings of that book were empirically tested by others, most notable by members of the “Aston School.” We then look beyond the narrow focus on the relationship between technology and organizational structure for which Joan is best remembered to rehabilitate her reputation as a scholar of the politics of technological and organizational change before concluding by reflecting on the contributions of the other chapters in this volume.

## **THE INITIAL RECEPTION OF INDUSTRIAL ORGANIZATION: THEORY AND PRACTICE**

Joan undertook the ground-breaking project originally reported in the 1958 pamphlet, *Management and Technology*, not at one of Britain’s great universities, but at the unfashionable address of the South East Essex Technical College (then in the county of Essex but now part of the London Borough of Barking and Dagenham). The Human Relations Research Unit



had been set up at the college, which is now part of the University of East London, in 1953 with support from a number of agencies including funding ultimately derived from the Marshall Plan. Its express purpose was to enhance the performance of industry and commerce through the application of social science. Those readers familiar with the area will know that, at the time, it was economically and culturally dominated by the Ford assembly plant in nearby Dagenham, but it was also home to a diverse range of small- and medium-sized industrial workshops that were typical of the pre-war Greater London economy (Woodward, 1965; Massey & Meegan, 1982). It was into this diverse industrial milieu that Joan and her research team ventured (Fig. 1), completing their main study in 1958.

As we noted earlier, the preliminary results were published by the British Government's Department of Scientific and Industrial Research (Woodward, 1958) and, according to Joan herself, the most important finding the research team revealed was

... that similar administrative expedients could lead to wide variations in results. Firms in which organizational structure reflected an implicit acceptance of what has come to be known as classical management theory were not always the most successful from a commercial point of view. This theory did not therefore appear to be adequate as a practical guide to those responsible for the organization of industry. (Woodward, 1965, p. vi)

This observation – that successful manufacturing organizations did not always conform to the prescriptions offered by the management textbooks of the day but rather responded to the demands of their unique operating circumstances – became popularized through its role as a foundational assumption of “Contingency Theory” (Klein, 2006). Of course, ideas that seem so obvious today can be remarkably radical when they are proposed for Joan was challenging the fundamental orthodoxy of the time: that “classical management theory” derived from Frederick Winslow Taylor, Henri Fayol, or Mary Parker Follett did indeed offer a universal set of principles that would lead to a convergence of organizational structures and practices, be they to be found in Detroit, the Soviet Union (Lenin and other Bolsheviks were famously attracted to the “scientific” aspects of Taylor’s ideas), or in an unprepossessing East London suburb bypassed by the A13 arterial road.

According to Joan, by applying these principles, we ought to find three characteristic configurations of authority relations: (1) line organization where authority flows directly from the chief executive to subordinate managers and onto employees in a traditional bureaucratic manner; (2) functional organization where individual employees were directed by a