# SOMETHING OLD, SOMETHING NEW...ARE NEW ORGANIZATIONAL PRACTICES REPLACING OLD ONES OR DO THEY CO-EXIST? \*

# Ian Palmer

Dean's Unit
Faculty of Business
University of Technology, Sydney
PO Box 123 Broadway, NSW
Australia 2007
email: lan Palmer@uts.edu.au

# REFEREED STREAM (PAPER PRESENTATION) √

# Richard Dunford

Macquarie Graduate School of Management
Macquarie University
Sydney, NSW 2109
Australia
email: Richard Dunford@mq.edu.au

#### Jodie Benveniste

University of Technology, Sydney PO Box 123 Broadway, NSW Australia 2007 email: hotlaksa@internode.on.net

# John Crawford

School of Management University of Technology, Sydney PO Box 123, Broadway NSW Australia 2007 Email: John Crawford@uts.edu.au

# SOMETHING OLD, SOMETHING NEW...ARE NEW ORGANIZATIONAL PRACTICES REPLACING OLD ONES OR DO THEY CO-EXIST?

# ABSTRACT

The new organizational forms literature argues that 'new' ways of organizing are required to ensure speed, flexibility and innovation. Originally it was asserted that 'new' organizational practices will replace' old' practices, such as formalization and centralization. Against this view, other writers have argued more recently that 'old' and 'new' practices are compatible and can coexist. Our study tests this emerging compatibility view. Our 2003 survey findings of Australian human resource managers, which repeat an earlier study conducted in 1996, suggest that formalization and centralization remain important features of organizational design. We conclude that the key to understanding new organizational forms may lie in the interaction between 'old' and 'new' practices, rather than simply in the 'new' practices themselves.

Key words: new forms, organization, formalization, centralization

<sup>\*</sup> Paper for presentation in the Organization Theory Division, ANZAM Conference, 2005, Canberra, Australia. A longer version of this paper is currently under consideration at Asia Pacific Journal of Human Resources.

A 'new organizational forms' literature has emerged over the last two decades. The literature argues that in a business environment which is dynamic, fast changing and competitive, the traditional bureaucracy with practices such as centralization and formalization is inflexible and unresponsive (Dafi & Lewin, 1993; Child & McGrath, 2001). As a result, bureaucracies need to be replaced by 'new organizational forms' based on practices such as flexible work groups, delayering and collaborative networks that allow for speed, flexibility and innovation (Child & Rodrigues, 2003; Nadler & Tushman, 1999; Volberda, 1996)

More recently, researchers have argued that instead of replacing 'old' with 'new', the two are compatible and can coexist. But no longitudinal, empirical studies have been undertaken to assess the validity of either argument. In this paper, we address the compatibility issue.

#### CO-EXISTENCE OF 'OLD' AND 'NEW' PRACTICES

The original view in the 'new organizational forms' literature regarded 'new' organizational practices as being incompatible with 'old' forms (Fulk & DeSanctis, 1995). This assumption of incompatibility was based on the view that new organizational forms practices are designed for flexibility, whereas traditional practices are designed for stability (Dess, Rasheed, McLaughlin & Priem, 1995). Due to radical changes in the business environment, new organizational forms are seen to represent a fundamental shift in organization structure, processes and decision-making (Bartlett & Ghoshal, 1993). Although there may be a transition period between 'old' and 'new' forms, 'new' forms will eventually replace traditional ways of organizing (Miles & Snow, 1997).

More recently, however, another view has emerged to counteract this argument. Not all researchers agree that 'new' forms necessitate a dismantling of 'old' forms. Instead, and in what we label as the compatibility argument, it is claimed that 'old' and 'new' practices can coexist.

Organizations can combine both bureaucracy and flexibility (Bigley & Roberts, 2001).

Organizations may be viewed as dualistic entities (Pettigrew & Fenton, 2000) which combine

traditional or hierarchical practices with new more flexible, market-based practices (Holland & Lockett, 1997; Tushman & O'Reilly, 1997). From this perspective, the new model for organizing resembles a dialectic (Child & McGrath, 2001), one in which the core design challenge is for new organizational forms to cope with apparent paradoxes such as efficiency and innovation; global operating control and local responsiveness; and centralized vision and decentralized autonomy.

Few researchers have examined whether co-existence is a passing phase or an enduring feature of organizational life. The INNFORM project and Palmer & Dunford's (2002) work are exceptions. The INNFORM project (Pettigrew & Fenton, 2000; Pettigrew et al., 2003) surveyed large organizations in Europe, US and Japan, asking respondents to compare the organization in 1992 and 1996. They found a trend toward flatter and more decentralized structures, process changes involving investment in IT, more horizontal and vertical linkages, and boundary changes through increased outsourcing. They also found that 'new' organizational practices existed alongside 'old' practices, supporting the co-existence argument. Although the project surveyed a broad range of organizations, the data was not truly longitudinal. The survey questioned respondents at one point in time and relied on management's recall of events four years prior. Survey methodologists have found that data quality suffers with the passage of time (Pierett, 2001; Beckett, DaVanzo, Sastry, Panis, & Peterson, 2001), and that the more complex the events, the more likelihood of inaccurate recall (Wu, Martin, & Long, 2001).

Palmer & Dunford (2002) surveyed the top 2000 organizations by revenue in Australia in 1996 and found that 'new' practices (e.g. delayering, networks/alliances, outsourcing, disaggregation of business units, empowerment, flexible work groups, short term staffing, reducing internal or external boundaries) co-exist with traditional practices (e.g. formalization and centralization). Increased use of 'new' organizational practices was not consistent with less formalization and increased decentralization. They found co-existence of 'new' and 'old' organizational practices, but could not comment on whether co-existence was transitory or an enduring feature of organizational life. Hence, the purpose of the current study is to test the

stability of their findings. Were the findings an artefact of the 1996 data or are they enduring? Is co-existence a credible argument or are 'new' practices replacing traditional practices?

#### DEVELOPMENT OF HYPOTHESES

Although some writers suggest that hypercompetition has not increased in the 1990s compared to the 1970s (MacNamara, Vaaler, & Devers, 2003), others accept that it has and that 'new' organizational practices are needed to cope with the dynamic business environment (Child & Rodrigues, 2003; Nadler & Tushman, 1999; Volberda, 1996). Both the compatibility and incompatibility arguments accept this latter assumption and, in line with it, Palmer & Dunford (2002) found that greater use of 'new' organizational practices was associated with more dynamic business environments. As such, we propose the following:

Hypothesis 1: The more dynamic the business environment the greater the use of new organizational form practices

The next two hypotheses explore the compatibility/incompatibility arguments in relation to formalization and centralization, both of which are commonly accepted as traditional organizational practices (Pugh, Hickson, Hinings & Turner, 1969).

Formalization refers to the degree to which organizations have well articulated policies, procedures, plans and systems of operation. The 'new organizational forms' literature originally suggested an incompatibility line, that because formalized organizations are too restrictive and rigid, they are unable to respond to a dynamic business environment (Damanpour, 1991; see also Ogbonna & Harris, 2003). However, the emerging compatibility arguments maintain that formalization, rather than inhibiting innovation, encourages it by providing certainty and reliability (Adler & Borys, 1996; Baum & Wally, 2003; Caruana, Morris, & Vella, 1998; Nahm, Vonderembse, & Koufteros, 2003). Consistent with the compatibility argument, Palmer & Dunford (2002) discovered that greater use of formalization is associated with the use of 'new' organizational practices. If the compatibility argument is correct then we would expect the following to be the case:

Hypothesis 2: Use of new organizational form practices is not associated with lower levels of formalization

Centralization refers to the degree to which decision-making is concentrated in authority. The 'new organizational forms' incompatibility argument maintains that decentralization leads to increased flexibility by promoting entrepreneurial behaviour (Caruana et al. 1998), improving organizational communication (Holtzhausen, 2002) and pushing down decision-making to those best equipped to make decisions (Nahm et al. 2003). However, the compatibility argument contends that centralization of strategic decision-making is needed in uncertain environments (Baum & Wally, 2003; Chesbrough & Teece, 1996; Milgrom & Roberts, 1995) and rather than inhibiting innovation, allows a quick response to market intelligence (Lin & Germain, 2004). Consistent with the compatibility argument, Palmer & Dunford (2002) found that decentralization was not associated with greater use of 'new' organizational practices. If the compatibility argument is correct then we would expect the following to be the case:

Hypothesis 3: Use of new organizational forms practices is not associated with lower levels of centralization

### METHOD

In 2003 a four-page survey was posted to human resource managers of the top 1997 organizations in Australia as measured by revenue. We obtained a response rate of 22.5%. Responding organizations were spread across all industries, with manufacturing being the best represented (28%) followed by services (18.3%) and wholesale trade (15.1%). The human resource managers who answered the survey had been with their organization for an average of 5 ½ years. The majority were male (59%) and over 40 years of age (66%).

# RESULTS

As shown in Table 1 the overall level of use of the new organizational practices indicate a moderate general level of adoption. On a five-point scale, ranging from 1 = not used at all, to 5 = not used at all.

used to a large extent, the mean scale score is 2.62 (s.d. = .71), a value that falls just below the scale mid-point of 3. In relation to Hypothesis 1 the positive and statistically significant correlation of .26 (p<.01) between the new organizational practices and environmental dynamism scales indicates that this hypothesis is supported by the results of the study.

Hypotheses 2 and 3 are both supported by the correlations shown in Table 1. Negative correlations were not found between the new organizational practices scale and either of the formalization and centralization scales. For formalization, a statistically significant and positive correlation with new organizational practices was found (r = .26, p < .01), while for centralization there exists a near-zero, but positive, correlation of .08 with use of new organizational practices.

The same conclusions regarding the hypotheses can be drawn from the regression analyses, in which the relevant relationships are investigated after taking account of the control variables, revenue, number of staff, age of organization, and the type of industry. This analysis, displayed in Table 2, shows that the introduction of the three main independent variables, environmental dynamism, formalization and centralization into the model leads to a statistically significant increase in the prediction of the use of new organizational practices ( $\Delta R^2 = .11$ , p<.01) after accounting for the influence of the control variables. In particular can be observed a positive and statistically significant regression coefficient ( $\beta = .22$ , p<.01) representing the effect of environmental dynamism on the extent of use of new organizational practices. Thus, after taking account of the control variables, Hypothesis 1 is again confirmed. Similarly, neither of the regression coefficients for formalization nor centralization are negative ( $\beta$ 's of .22 and .05, respectively). Thus, Hypotheses 2 and 3 are supported by the results of the regression analysis.

5

TABLE 1

Means, Standard Deviations, Scale Reliabilities and Correlations\*

Variable	М	s. d.	ſ	2	3	4	5	6	7	В	9	10	11	12	13
I. New Practices *	2 62	71	(71)*												
2. Env. Dynamism *	1 16	6.3	26**	(64)											
3. Formalization *	89	20	26**	19**	(72)										
4. Centralization (	3.75	71	US	Uri	- 04	( 90)									
5. Revenue *	426 80	1,683 97	12*	05	07	08									
6. Number of staff	1381 22	8 335 69	03	.05	04	915	85**								
7. Age of org. h	39 34	34 57	.07	09	17**	00	.25**	19**							
8 Mining 1	04	20	04	-,10*	- 10*	04	62	02	- 08						
9. Construction	.07	26	.03	15**	- 10*	00	01	- 02	02	- 00					
0. Transport	09	29	.02	05	0.3	11*	01	02	07	- 07	- 09*				
1. Wholesale	15	36	- 10+	.04	04	-,09	- 05	- 06	01	- 09	- 12*	- 14**			
2. Retail	υ7	25	- 23**	- 03	03	00	11	16**	- 08	- (K)	- 08	- 09	- 11*		
3. Service	19	39	07	OX	0.3	02	- 02	00	03	- 10*	-   3**	- 15**	- 20**	-13**	
4. Finance	10	30	06	- 08	02	- 01	to•	01	.02	- 07	- 09*	- 11*	- 14**	- 09*	- 16**

<sup>\*</sup> p< 05, \*\* p< 0

6

<sup>\*</sup> Correlations are calculated with pairwise deletion; \* Cronbach's alphas appear on the diagonal for multiple-item measures.

Scale based on mean score of usage of practices of delayering, network/alliances, outsourcing, disaggregation of business units, empowerment, flexible work groups, short term staffing, reducing unternal or external boundaries. 1 = not used at all, 5 = used to a large extent, "Scale based on mean score of intensified competition, short product life-cycles, a high degree of technological change, market turbulence an increased expectation of corporate responsibility and customisation of products 1 = not dynamic, 5 = very dynamic, "Scale based on Marsden et al., 1994.1 = low, 5 = high. \*\$x1.000.000.

h Measured in years. For dummy variables 8 to 14, coded as 0= not those industries, 1= those industries

TABLE 2

Hierarchical Regression Analysis for Use of New Organizational Practices \*\*

	Mode	Mode	12	
Variable	В	1	β	t
Control Variables				
Revenue	.30	2.92**	.26	2.70**
Number of Employees	19	-1.90	- 17	1 78
Age of org.	.00	05	04	82
Mining	07	-1.29	02	36
Construction	02	33	.05	.94
Transport	03	44	00	04
Wholesale	14	-2.40*	11	-1.97*
Retail	26	-4.57**	24	-4.49**
Service	00	05	0.1	.10
Finance	02	35	.02	33
Main Variables				
Envir. Dynamism			22	4.31 **
Formalization			22	4.30 **
Centralization			.05	1.06
R <sup>2</sup>	10		.21	
F	3 87 **		6.85**	
df	10, 340		13, 337	
$\Delta R^2$			11 **	
F			15.14	
df			3, 337	

<sup>&</sup>quot;Linear regression with pairwise deletion of missing data;

#### Limitations

We are mindful of a number of limitations regarding our results. First, the relationships of interest were between variables whose measurement relied on questionnaire responses from the same subjects, thus raising the potential problem of spurious inflation of associations because of common method variance (Spector, 1994; Williams and Brown, 1994). However, as some authors have suggested (e.g. Crampton and Wagner, 1994), this problem is less likely to arise in certain domains such as the study of organizational structure, where subjects are reporting information of a more factual rather than evaluative nature.

Second, we would have preferred the Cronbach alpha reliability coefficient for the scale "environmental dynamism" to have a value higher than .64. However, although this is lower than is generally considered desirable, it might not have serious consequences regarding the main conclusions of the study. The lower reliability would tend to lead to an underestimate of the association with other variables, including the extent of use new organizational practices. Since a statistically significant positive relationship between these variables was found in this study, thus supporting Hypothesis 1, the lower reliability of this scale would not be expected to lead to an erroneous drawing of this conclusion. Third, all respondents in this study were human resource managers and it is not known if their perceptions are representative of others in the organization. Finally, the top 1997 Australian organizations were sampled and the findings of the study might not generalize to smaller organizations or ones outside Australia.

# DISCUSSION AND CONCLUSION

The objective of the study was to assess the emerging compatibility argument in the 'new organizational forms' literature. Originally, the 'new organizational forms' literature viewed 'old' organizational practices, such as formalization and centralization, as incompatible with 'new' organizational practices. As such, it was argued that 'new' organizational practices would replace 'old' forms. More recently, however, the argument has emerged that 'old' practices can co-exist alongside 'new' practices and that 'old' and 'new' can be complementary, rather than contradictory.

The current study extends findings reported by Palmer & Dunford (2002). By repeating their survey, we were able to examine whether the results were transitory or an enduring feature of organizational life.

Notwithstanding the limitations noted above, our investigation of Hypothesis 1 confirmed a positive and significant relationship between the use of 'new' organizational practices and a dynamic business environment. The more dynamic the business environment, the higher the use of 'new' organizational practices. Hypothesis 2 supported the compatibility argument as use of 'new' organizational practices was not associated with lower

<sup>\*</sup> p<.05

<sup>\*\*</sup> p< .01

levels of formalization. In fact, the findings revealed the opposite. The use of 'new' organizational practices was associated with *higher* levels of formalization. This suggests the continuing relevance, if not the increasing importance, of rules, regulations and procedures. Hypothesis 3 was also confirmed. Use of 'new' organizational practices was not associated with lower centralization, thus supporting the compatibility argument. This suggests that decentralization is not a prerequisite for the use of 'new' organizational practices.

The results of this survey confer with the survey conducted by Palmer and Dunford seven years earlier. Both surveys support the compatibility, rather than the incompatibility argument. Formalization and centralization are not being replaced by 'new' organizational practices. Instead, they are co-existing alongside 'new' practices. Our findings are also consistent with the INNFORM project finding, the only other empirical survey across a wide range of organizations, whereby the 'new is emerging alongside and within the old, rather than replacing the old' (Pettigrew et al. 2003: 32).

Co-existence suggests a more complex interaction between 'new' and 'old' organizational practices than simple replacement. This is consistent with the view that centralization and formalization may be beneficial for some but not all practices within an organization. For example, high centralization of strategic decision-making, but low centralization of operations management, is associated with high performance (Baum & Wally, 2003). Similarly, high performance is associated with high formalization of organizational routines, but low formalization of non-routines (Baum & Wally, 2003).

Organizations also mix and match centralized and decentralized subsystems to fit strategy and influence employee behaviour (Overholt, 2000), and call centre management uses both standardised procedures and flexibility to meet customer needs (Adria & Chowdury, 2004). Indeed, Pettigrew & Fenton (2000) discovered that between 1992 and 1996 operational decentralization increased but strategic decentralization did not.

Further, decentralization and low formalization, rather than being a panacea for organizational ills, may create as many problems as they solve. Decentralized organizations may be more flexible and responsive, but they can also lead to chaos, duplication and

inconsistency (Lin & Germain, 2003). Similarly, organizations with low formalization can promote interaction and challenge orthodoxy, but can also lead to the loss of valuable information and the inability to convey priorities and values (Lin & Germain, 2003). Decentralization and centralization can produce different but equally desired outcomes such that decentralized research and design functions lead to product designs and incremental innovation, but centralized structures produce major technological advances (De Sanctis, Glass, & Ensing, 2002). Organizations, therefore, are faced with a design dilemma of encouraging innovation, whilst retaining sufficient accountability (Grimshaw, Beynon, Rubery, & Ward, 2003).

The apparent increase in formalization associated with 'new' organizational practices suggests that well-articulated policies, procedures, plans and systems may be needed in a dynamic business environment. For example, one feature of a dynamic business environment is increasing customization, or tailoring of products or services to clients. Lin & Germain (2004) discovered that formalization positively predicts customer involvement in product development. They conclude that formalization rather than being a barrier to innovation is necessary for responding effectively to market intelligence.

The results of this study suggests that the 'new organizational forms' literature, when emphasizing radical replacement rather than integration of 'old' and 'new' practices, may be missing the key dynamic: what is novel about 'new' organizational practices is not the 'new' practices themselves, but the way they interact with traditional organizational practices.

From a management perspective the implication is that instead of focusing on substitution of old practices managers should direct their attention to what mix of 'old' and 'new' practices is needed to enhance organizational performance.

9

#### REFERENCES

- Adler, P. & Borys, B. (1996) 'Two types of bureaucracy: Enabling and coercive', Administrative Science Quarterly, vol. 41, pp. 61-89.
- Adria, M. & Chowdhury, S. (2004) 'Centralization as a design consideration for the management of call centers', *Information & Management*, vol. 41, no. 4, pp. 497
- Barley, S. (1996) 'Technicians in the workplace: Ethnographic evidence for bringing work into organization studies', Administrative Science Quarterly, vol. 41, no. 3, pp. 404-441.
- Bartlett, C. & Ghoshal, S. (1993) 'Beyond the M-form: Toward a managerial theory of the firm'. Strategic Management Journal, vol. 14, pp. 23-46.
- Baum, J. & Wally, S. (2003) 'Strategic decision speed and firm performance', Strategic Management Journal, vol. 24, no. 11, pp. 1107-1129.
- Beckett, M., DaVanzo, J., Sastry, N., Panis, C. & Peterson, C. (2001) 'The quality of retrospective data', *Journal of Human Resources*, vol. 36, no. 3, pp. 593-625.
- Bigley, G. & Roberts, K. (2001) 'The incident command system: High-reliability organizing for complex and volatile task environments', Academy of Management Journal, vol. 44, no. 6, pp. 1281-1299.
- Caruana, A., Morris, M. & Vella, A. (1998) The effect of centralization and formalization on entrepreneurship in export firms', Journal of Small Business Management, vol. 36, no. 1, pp. 16-30.
- Chesbrough, H. & Teece, D. (1996) 'When is virtual virtuous? Organizing for innovation', Harvard Business Review, vol. 74, pp. 65-73.
- Child, J. & McGrath, R. (2001) 'Organizations unfettered: Organizational form in an information-intensive economy', Academy of Management Journal, vol. 44, no. 6, pp. 1135-1148.
- Child, J. & Rodrigues, S. (2003) 'Corporate governance and new organizational forms: Issues of double and multiple agency', Journal of Management and Governance, vol. 7, no. 4, pp. 337-360.
- Crampton, S. M. & Wagner, J. A. III. (1994) 'Percept-percept inflation in microorganizational research', Journal of Applied Psychology, 79, 67-76.
- Daft, R. & Lewin, A. (1993) 'Where are the theories for the 'new' organizational forms? An editorial essay', Organization Science, vol. 4, no. 4, pp. i-vi.
- Damanpour, F. (1991) 'Organizational innovation: A meta-analysis of effects of determinants and moderators', Academy of Management Journal, vol. 34, no. 4, pp. 555-590.
- Dess, G., Rasheed, A., McLaughlin, K. & Priem, R. (1995) 'The new corporate architecture', Academy of Management Executive, vol. 9, no. 3, pp. 7-20.
- DeSanctis, G., Glass, J., & Ensing, I. (2002) 'Organizational designs for R&D', Academy of Management Executive, vol. 16, no. 3, pp. 55-66.
- Fulk, J. & DeSanctis, G. (1995) 'Electronic communication and changing organizational forms', Organization Science, vol. 6, no. 4, pp. 337-349.
- Grimshaw, D., Beynon, H., Rubery, J. & Ward, K. (2002) 'The restructuring of career paths in large service sector organizations: Delayering, upskilling and polarization', Sociological Review, vol. 50, no. 1, pp. 89-116.
- Holland, C. & Lockett, A. (1997) 'Mixed mode network structures: The strategic use of electronic communication by organizations', Organization Science, vol. 8, no. 5, pp. 475-488
- Holtzhausen, D. (2002) 'The effects of a divisionalised and decentralized organizational structure on a formal internal communication function in a South African organization', *Journal of Communication Management*, vol. 6, no. 4, pp. 323-339
- Lin, X. & Germain, R. (2004) 'Antecedents to customer involvement in product development: Comparing US and Chinese firms', European Management Journal, vol. 22, no. 2, pp. 244-255.

- Lin, X. & Germain, R. (2003) 'Organizational structure, context, customer orientation, and performance: Lessons from Chinese state-owned enterprises', Strategic Management Journal, vol. 24, no. 11, pp. 1131-1151.
- McNamara, G., Vaaler, P. & Devers, C. (2003) 'Same as it ever was. The search for evidence of increasing hypercompetition', Strategic Management Journal, vol. 24, no. 3, pp. 261-278.
- Marsden, P.& Cook, C. & Knoke, D. (1994) 'Measuring organizational structures and environments', American Behavioral Scientist, vol. 37, no. 7, pp. 891-910.
- Miles, R. & Snow, C. (1997) 'Organizing in the knowledge age. Anticipating the cellular form', Academy of Management Executive, vol. 11, no. 4, pp. 7-24.
- Milgrom, P. & Roberts, J. (1995) 'Complementarities and fit: Strategy, structure and organizational change in manufacturing', *Journal of Accounting and Economics*, vol. 19, no. 2/3, pp. 179-208.
- Nadler, D. & Tushman, M. (1999) 'The organization of the future: Strategic imperatives and core competencies for the 21st century', Organizational Dynamics, vol. 28, no. 1, pp. 45-60
- Nahm, A., Vonderembse, M. & Koufteros, X. (2003) 'The impact of organizational structure on time-based manufacturing and plant performance', *Journal of Operations Management*, vol. 21, no. 3, pp. 281-306.
- Ogbonna, E. & Harris, L. (2003) 'Innovative organizational structures and performance: A case study of structural transformation to 'groovy community centers'', *Journal of Organizational Change Management*, vol. 16, no. 5, pp. 512-533.
- Overholt, M. & Connally, G. (2000) 'The strands that connect: An empirical assessment of how organizational design links employees to the organization', *Human Resource Planning*, vol. 23, no. 2, pp. 38-51.
- Palmer, I. & Dunford, R. (2002) 'Out with the old and in with the new? The relationship between traditional and new organizational practices', *International Journal of Organizational Analysis*, vol. 10, no. 3, pp. 209-225.
- Pettigrev, A. M. & Fenton, E. M. (2000) 'Complexities and dualities in innovative forms of organizing', In A. M. Pettigrew & E. M. Fenton (eds.), *The innovating organization* (pp. 279-300). London: Sage.
- Pettigrew, A., Whittington, R., Melin, L., Sanchez-Runde, C., van den Bosch, F., Ruigrok, W. & Numagami, T. (2003) Innovative forms of organizing. London: Sage.
- Pierret, C. (2001) 'Event history data and survey recall', Journal of Human Resources, vol. 36, no. 3, pp. 439-466.
- Pugh, D., Hickson, D., Hinings, C. & Turner, C. (1969) 'The context of organization structures', Administrative Science Quarterly, vol. 14, no. 1, pp. 91-114
- Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. Journal of Organizational Behavior, 15, 385-392.
- Tushman, M. L. & O'Reilly, C. A. (1997) Winning through innovation. Boston: HBS Press. Volberda, H. (1996) 'Toward the flexible form: How to remain vital in hypercompetitive environments', Organization Science, vol.7, no. 4, pp. 359-374.
- Williams, L. & Brown, B. (1994) 'Method variance in organizational behavior and human resources research: Effects on correlations, path coefficients and hypothesis testing', Organizational Behavior and Human Decision Processes, 57, 185-209.
- Wu, L., Martin, S. & Long, D. (2001) 'Comparing data quality of fertility and first sexual intercourse histories', *Journal of Human Resources*, vol. 36, no. 3, pp. 520-555.