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Keywords: relationship attractors, stability, complexity, relationship typologies

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Business relations are complex adaptive systems that are co-produced through the interactions of the parties involved over time. Any sample of relations at a particular time comprises a mix of relations of some which have reached stable attractors while others are in transition. We report the results of a cluster analysis of buyer-seller relations, based on measures of relationship atmosphere, in which stable versus transient or unstable relations are distinguished and the resulting clusters are compared and interrelated. The data comes from the Interfirm Relations Research Program and includes seller and buyer perceptions of relations. We show that, not unexpectedly, there are more types of unstable relationship atmospheres than stable ones and we examine the nature of the transition paths suggested by our results.

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Introduction

Business relationships are a type of complex adaptive system that self-organises and evolves over time through organisations' internal and external interactions (Wilkinson and Young 2002, 2005). Each of the firms involved responds to signals coming from their own market and industry environment as well as to signals coming from others involved in the relationship. Many different kinds of interpersonal, intra-firm and inter-firm interactions take place that shape the way a relationship develops and evolves. Each relation develops its own history and takes on its own distinctive personality as it is shaped by historical events, context and contingencies, much like a human personality develops. However while hypothetically there is a near-infinite number of ways that relationships could develop and configure themselves, certain attractors (e.g. profitable, mutually beneficial) and combinations of attractors will be more attractive to the participants and thus more likely (Welch and Wilkinson 2002, Young and Wilkinson 1997). Having reached a state where there is little or no impetus by participants to change the relationship and assuming the relationship is of an atmosphere and within an environment that enables it to reproduce itself; relationships retain certain characteristics and represents a kind of equilibrium state of the relation (Wilkinson and Young 2005). This paper considers what types of business relations exist, under what conditions different types emerge, how they evolve and what relational forms and evolution patterns are most effective for the firms involved.

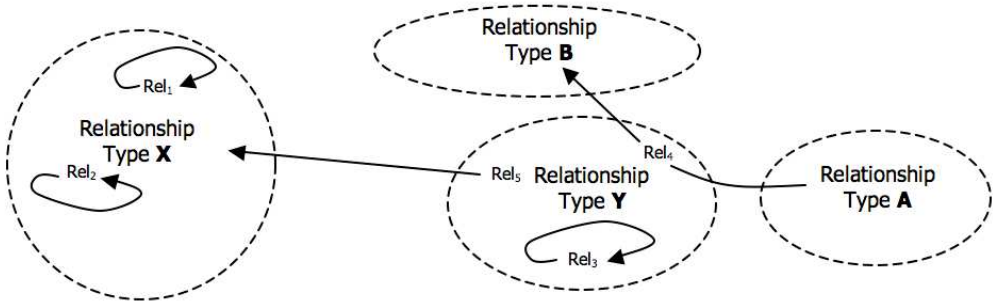
Classifying relationships within typologies is an effective way of seeking insight into these issues (Keep, Hollander and Dickinson 1998). Many ways of classifying business relations have been offered in the literature but these tend to be theory-based, armchair type proposals; there have been only limited attempts to empirically identify the relationship types that exist in a systematic way. The only completely empirically based classification of relationship types reported in the marketing literature is that by Cannon and Perrault (1999). This classification used cluster analysis to identify eight types based on buyers' perceptions of the patterns of behaviour taking place in a sample of different types of relations. Other empirical classification schemes exist but they impose a classification on their data based on a predetermined set of dimensions or theory, e.g. Young and Wilkinson (1997) and Bensaou (1999).

In this paper we report some of the results of study designed to empirically identify the types of business relations that emerge based on the type of relationship atmospheres they have. We focus on

the stability and dynamics of relations and attempt to distinguish between relations that appear to have reached some equilibrium, more or less stable form and relations that appear to be in transition.

It is important to distinguish between stable and transitory forms of relations because at any given time there is likely to be a mix of both types existing. The identification of different types of relationship attractors will be distorted by the inclusion of relations transitioning between different types of attractors. Figure 1 depicts this problem, showing that relationships can be evolving yet remaining within a particular relationship configuration or moving to a new relationships type. If the latter, then measurement of a relationship state at a point in time can be more or less accurate depending on the pathway (Wilkinson and Young 2001). This is illustrated in Figure 1 where one relationship is moving from Type Y to Type X and another from Type A to Type B. If accurate, measure of the former may capture the shadow of the past (i.e. what was) or the shadow of the future (what it will become). It may neglect to capture that the relationship is changing but still reflects something of the relationship's nature. The latter movement is more problematic. A single measurement may indicate that relationship to be Type Y, yet this is a transient as the relationship evolves towards Type B and does not capture the nature of the relationship and its dynamics. To overcome this problem, we attempt to distinguish between stable and transitory relational forms based on a comparison of the relationship types existing in stable versus unstable environments. The resulting typology will more accurately represent the range of relational states and allow more effective comparison of relationships.

Figure 1 Stable and Transitional Business Relations



The remainder of the paper is organised as follows. First we describe the database and clustering methods used for the research, then we describe and interpret the types of relations identified. Finally research and management implications are discussed.

Methodology

The business relationship database used is from the second stage of the Interfirm Relations Research Program (IRRP2) undertaken at the University of New South Wales in Sydney, Australia (Young and Wilkinson 1997). It comprises a very comprehensive audit of a focal relationship garnered from personal interviews with buyer and seller firms. The focal relationships were systematically selected from a wider group of recalled relationship, with informants reflecting on relationships with which they were familiar and articulating one or more that they perceived to be good, moderately good, not so good or poor. The focus of each interview was on a particular relation that the respondent was familiar with and was selected so as to ensure a mix of very good, moderately good, poor or very poor working relations. Altogether the IRRP2 database includes data regarding 345 relations and these are evenly split between buyer and seller perspectives of a focal relationship.

Hierarchical and non hierarchical clustering methods, similar to those used by Cannon and Perreault (1999), were used to identify different types of business relations based on a number of dimensions of relationship atmosphere identified in previous IMP research, i.e. power/dependence, cooperativeness, trust, competitiveness/opportunism; understanding; closeness/distance. Exploratory factor analysis was used to summarise these measures in terms of five underlying dimensions of relationship atmosphere, as shown in Table 1.

Table 1 Measures of Relationship Atmosphere

Scale Name (*Response Cues*) and sample items	**Coefficient Alpha**
Relationalism *(Highly un-relational – Highly Relational)*	0.925
Cooperativeness of the relationship *(highly uncooperative – highly cooperative)*	0.781
My firm has and demonstrates a sincere interest in Firm X's success	
We work hard to maintain a good working relationship with Firm X	
Trust *(highly un-trusting – highly trusting)*	0.946
My firm has confidence in the fairness and honesty of Firm X	
The relationship between Firm X and my firm is characterised by confidence in each other	
Commitment *(highly uncommitted – highly committed)*	0.758
Relationship between Firm X and my firm is characterized by: High levels of commitment to the relationship	
How likely or unlikely is it that your firm will stop trading with Firm X in the foreseeable future?	
Understanding *(high levels of misunderstanding – high levels of understanding)*	0.829
Communication between my firm and Firm X is very efficient	
Firm X is usually able to look at issues from my firm's point of view	
Closeness *(very distant – very close)*	0.815
The relationship between Firm X and my firm is characterised by close and continuous personal contacts	
The relationship between Firm X and my firm is characterised by numerous good personal relationships between the individuals of the two firms	
Opportunism *(highly opportunistic – highly benevolent)*	0.658
Sometimes it is necessary to hold back information from Firm X to get things done (R)	
Firm X sometimes suggests unnecessary changes in practices and procedures for doing business (R)	
Absolute Dependence *(highly independent – highly interdependent)*[+]	Formative
Relative Power *respondent is dominant/Firm X is dominated – respondent is dominated/Firm X is dominant)*	Formative
My firm's operations would be in serious trouble if we were let down by Firm X	
It would be easy for my firm to replace Firm X (R)	
Relative Influence *(respondent is dominant/Firm X is dominated – respondent is dominated/Firm X is dominant)*	Formative
Relative Influence – (9 items) – Weighted sum rating of relative influence summed over 9 issues (incl. product/service design and quality, financial arrangements including prices/fees, delivery/transportation etc.)	

Many other characteristics of the relation were measured, including the kinds of interactions taking place, the characteristics of the firms, products and services involved and the environment in which it operates. These were used to profile each type of relation.

Cluster Analysis

A two-stage clustering procedure is used to take advantage of the benefits of both hierarchical and non-hierarchical clustering approaches (Punj and Stewart 1983, Bunn 1993). Hierarchical cluster analysis is used to identify candidate cluster solutions that best fit the data, based on minimising the proportional loss of heterogeneity or informativeness of the cluster solutions as clusters are fused

together, (Everitt 1974; Hill and Brennan 2000). We used the Squared Euclidean Distance as the distance measure, and the Average Linkage and Ward's method clustering algorithms because they have proved effective when used together in past studies (Everitt 1980; Milligan and Sokol 1980; Punj and Stewart 1983; Milligan 1996). K-means non-hierachical clustering was used to refine the candidate solutions and to identify the best fitting cluster solution

Clusters of relations were identified for the total sample as well as for relations classified as operating in stable or unstable environments based on a formative measure of the degree of change in the focal relationship and its environment over the past 12 months. The measure comprised changes in the number of competitors, degree of price-cutting and discounting, availability of capital, overall size of the market, range of available products/services of this type, and levels of promotion and advertising. One hundred and seventy relationships form what was termed the stable sample of relations, and the remaining 175 comprise the unstable environment sample.

Results

Five types of relationship clusters were identified for the total sample, as shown in Table 2. *Disgruntled Followers* (19%) are in highly competitive or opportunistic relations with the respondent's firm, usually the supplier, being the weaker, more dependent and smaller party. *Manipulative Leaders* (27%) are the first type's counterpart. They are competitive and opportunistic but the interviewee's firm is more dominant. *Benevolent Independent Relationships* (17%) rate very low on opportunism and dependence. The relation appears to be mutually beneficial involving non-critical inputs. *Arm's Length Relationships* (14%) are opportunistic, short lived and asymmetric in terms of power, though levels of interdependence are low. They resemble adversarial buying and selling relationships with a lack of close ties. *Close Relationships* (25%) score high on all measures of relationalism, including cooperativeness, trust, commitment, understanding, closeness, interdependence and benevolence and are longer lasting. The respondent's firm is typically the more dominant party.

Table 2 Mean Relationship Atmosphere Scores by Cluster

(standard deviation is below score)

Type of Relationship	N	Relationalism (highly un-relational – highly relational)	Non-Opportunism (highly opportunistic – highly non-opportunistic)	Absolute level of dependence (highly independent – highly interdependent)	Relative Dependence (R>X– X>R)	Relative Influence (R>X– X>R)
1 Disgruntled Follower	66	0.16 [c] 0.75	-0.58 [a] 0.74	0.26 [c] 0.77	1.12 [c] 0.85	0.94 [d] 0.76
2 Manipulative Leader	94	-0.23 [b] 0.69	-0.41 [a] 0.75	-0.06 [b c] 0.78	-0.66 [a] 0.76	-0.80 [a] 0.65
3 Benevolent Independent	59	0.43 [c] 0.73	1.01 [b] 0.60	-1.13 [a] 0.73	0.12 [b] 0.71	0.23 [c] 0.95
4 Arm's Length	47	-1.65 [a] 0.49	-0.73 [a] 0.93	-0.41 [b] 0.88	-0.44 [a] 0.90	0.47 [c] 0.82
5 Close	79	0.81 [d] 0.55	0.65 [b d] 0.70	0.93 [d] 0.59	0.02 [b] 0.75	-0.30 [b] 0.75

Notes: For each atmosphere dimension (i.e. column), means with the same superscript are not significantly different ($p<0.05$), based on Scheffe's joint pairwise comparison test. The mean(s) in the lowest range are indicated with superscript a, the next highest with b, and so on. In addition, boxes highlight the relationship type(s) with the mean in the highest range for that particular dimension, while circles highlight the lowest range.

We next considered how the cluster solutions change when relations in stable and unstable conditions are considered separately. A five cluster solution was found to be the best fit for the stable environment sample and an eight cluster solution for the unstable environment sample.

The mean scores on each atmosphere dimension for the five clusters identified for stable relations are shown in Table 3. St1 is characterized by high levels of relationalism, benevolence, interdependence and some dependence asymmetry favouring the respondent firm. They resemble Close relationships from the total sample and 30 were so classified. But St1 also comprises 12 Benevolent Independents which suggests that, in more stable environments, a subtype of these relationships appear as more similar to Close relations than they are to other Benevolent Independent types (i.e. to St4). St2 are opportunistic, interdependent with the respondent's firm the weaker party. They comprise mostly Disgruntled Followers (24 of the 28 so classified), which suggests that this relationship type exists largely unchanged in stable environments. St3 is similar to St2 with high levels of opportunism, interdependence and dependence and influence asymmetries, but respondent's firm is dominant. They are mostly Manipulative Leaders (42 of the 49 so classified) and, like St2, exists unchanged in stable environments. St4 have low interdependence, yet influence may still be exercised. They do not clearly resemble any of the types from the total sample, although most (18 of the 26 of so classified) are Benevolent Independents, suggesting a potentially unique subtype that emerges in stable environments. Finally, St5 are non-relational and opportunistic, with respondent firms still influenced by their counterparts. They resemble and comprise only Arm's Length relations

Table 3: Stable Environment Cluster Profiles

Means and Standard Deviations of relationship atmospheric variables by type of buyer/seller relationship (cluster).

Type of Relationship	N	Relationalism (highly un-relational – highly relational)	Non-Opportunism (highly opportunistic – highly non-opportunistic)	Absolute level of dependence (highly independent – highly interdependent)	Relative Dependence (R>X– X>R)	Relative Influence (R>X– X>R)
St1	45	0.796 [d] 0.542	0.979 [c] 0.545	0.450 [c] 0.696	-0.140 [a b] 0.916	-0.190 [b] 0.692
St2	28	-0.059 [b c] 0.864	-0.639 [a] 0.665	0.571 [c] 0.650	1.283 [c] 0.895	0.879 [c] 0.776
St3	49	-0.429 [b] 0.724	-0.454 [a] 0.832	0.167 [b c] 0.766	-0.582 [a] 0.687	-0.802 [a] 0.630
St4	26	0.265 [c] 0.568	0.177 [b] 0.917	-1.403 [a] 0.592	0.273 [b] 0.595	0.540 [c] 0.822
St5	22	-1.595 [a] 0.532	-0.690 [a] 0.667	-0.384 [b] 0.868	-0.156 [a b] 0.885	0.533 [c] 0.713

Notes: For each atmosphere dimension (i.e. column), means with the same superscript are not significantly different ($p<0.05$), based on Scheffe's joint pairwise comparison test. The mean(s) in the lowest range are indicated with superscript a, the next highest with b, and so on. In addition, boxes highlight the relationship type(s) with the mean in the highest range for that particular dimension, while circles highlight the lowest range.

The results suggest that in stable environments, the relationship types emerging are like those found for the total sample. The exception is Benevolent Independents who appear to emerge in two ways in stable environments. St1 is a mix of both Benevolent Independent and Close relations, which are more similar in stable environments. Benevolent Independents also seem to exist in a second form in stable environments, as indicated by St4, which implies that this broad type can exist in two forms in stable environments.

The mean scores on each atmosphere dimension for the eight clusters identified for unstable relations are shown in Table 4. Un1 has high levels of relationalism, benevolence, and interdependence. They comprise only Close relationships. Un2 is relational, benevolent and independent favouring the respondent. They resemble and are made up of mainly Benevolent Independents (18 of 28). Un3 have low levels of relationalism, are benevolent and the respondent firm is heavily influenced by their counterparts. Its closest match is Arm's Length relations (12 of 15) but appears to have a different type of atmosphere in unstable environments with one leading the other. Un4 is characterised by opportunism and asymmetry (favouring the counterpart firm). Further, these relationships display higher levels of interdependence and relationalism than most other unstable environment relationship types. Apart from a lack of influence asymmetries, Un4 relationships resemble Disgruntled Followers in the total sample and 15 of the 24 relationships are so classified.

Un5 has high levels of dependence and influence asymmetries. Un5 firms are highly influenced by and dependent on their counterparts, which resemble Disgruntled Follower relationships. In addition, they are characterized by higher levels of relationalism, benevolence and interdependence. Twenty-two of the 30 relationships in Un5 are classified as Disgruntled Followers which suggests two distinct subtypes exist in unstable environments (i.e. Un4 and Un5).

Table 4: Unstable Environment Cluster Profiles

Means and Standard Deviations of relationship atmospheric variables by type of buyer/seller relationship (cluster).

Type of Relationship	N	Relationalism (highly un-relational – highly relational)	Non-Opportunism (highly opportunistic – highly non-opportunistic)	Absolute level of dependence (highly independent – highly interdependent)	Relative Dependence (R>X– X>R)	Relative Influence (R>X– X>R)
Un1	31	0.938[a] 0.483	0.776[a] 0.721	1.041[a] 0.576	0.044[bc] 0.588	-0.564[ab] 0.720
Un2	28	0.699[a] 0.463	0.689[a] 0.715	-0.879[ab] 0.749	-0.317[ab] 0.864	0.162[bc] 0.791
Un3	15	-1.653[a] 0.454	0.371[ca] 0.638	-0.610[bc] 0.921	-0.179 0.795	0.816[ca] 0.830
Un4	24	0.186[ca] 0.829	-1.241[ab] 0.577	0.512[a] 0.888	0.825[c] 0.713	-0.001[bc] 0.631
Un5	30	0.397[ca] 0.588	0.296[ca] 0.695	0.159[ca] 0.624	0.833 0.813	1.280[a] 0.539
Un6	12	-0.684[b] 0.631	0.122[ca] 0.577	-1.571[a] 0.489	-0.440[ab] 0.819	-1.186[a] 0.509
Un7	28	-0.198[bc] 0.783	-0.366[bc] 0.757	0.318[a] 0.613	-0.907[ab] 0.704	-1.043[a] 0.559
Un8	7	-1.637[a] 0.396	-1.801[a] 0.752	-0.734[abca] 0.457	-1.244[a] 0.788	0.466[ca] 0.551

* The total sample mean and standard deviation are not exactly that of their standardized scores (i.e. μ=0; s.d.=1) due to the split of the total sample into stable and unstable relationships. This was undertaken so as to allow for comparisons between the stable and unstable sample (i.e. using identically standardized scales).

Un6 displays strongly independent characteristics, with what little dependence there is favouring the respondent's firm. Despite this, respondents rate their influence over their counterparts as greater, which makes them similar to Manipulative Leader relationships (8 of the 12). However, Un6 are non-opportunistic, unlike manipulative leaders, suggesting this is a subtype that exists in unstable environments. Un7 has higher levels of interdependence with the respondent's firm dominant, both in terms of relative dependence and influence. They also have the second lowest opportunism rating. These relations are similar to Manipulative Leader relations in the total sample, with all 28 classified as such. However, Manipulative Leader relations are distinctly less interdependent than Un7, suggesting a second subtype exists in unstable environments. Lastly, Un8 is highly un-relational, opportunistic and independent, with what little dependence there is favouring the respondent. But they rate the influence of the counterpart as high. These characteristics match Arm's Length relationships, with all 7 relations classified as Arm's Length in the total sample.

In order to investigate further the subtypes, pairwise comparisons were undertaken. The two subtypes of Disgruntled Followers are not different in terms of relationalism, interdependence and dependence asymmetries. Un4 is significantly more opportunistic than Un5 ($p<0.001$) and are much less influenced by their counterparts ($p<0.001$). The two subtypes of Manipulative Leaders differ only in terms of their degree of relational orientation ($p<0.001$) and interdependence ($p<0.05$). Un7 is more relational and interdependent than Un6. The core characteristics of Manipulative Leaders exist, i.e. high opportunism and dependence and influence asymmetries but two subtypes emerge in unstable conditions. The differences in relationalism and interdependence may be partly explained by other differences in these relations. Un7 involve transactions that are more heterogenous ($p<0.5$), more individually negotiated ($p<0.071$) and more frequent ($p<0.075$). Thus, they may require closer, more understanding atmospheres due to their more demanding nature. In addition the degree of change in the last 12 months is lower for Un7. Un6 also rate poorer future prospects for Firm X ($p<0.05$) and decreasing trends in business ($p<0.067$) which may indicate the relation is in the process of ending.

The two Arms Length relations are similar in terms of high levels of independence, strong influence asymmetries and low relational orientation. They diverge with regards to levels of opportunism and relative dependence. Un8 are significantly more opportunistic and asymmetrically dependent than Un3. In unstable environments, an even more extreme form of Arms Length relations appears to exist, as well as a more balanced, benevolent one.

Table 5 contrasts the stable and unstable environment relationship types drawing a sharp contrast between the relationship types found in stable and unstable environments. .

Table 5 Summary of Types of Relations Identified

Total Sample Relationship types	Total Sample (TS)	Stable enviroment	Unstable environment
Disgruntled Followers (DF) very competitive/opportunistic relation respondent firm, usually supplier, respondent weaker, more dependent and smaller party	(19%)	St2 – very similar to TS	Two subtypes of DF Un4 - higher relationalism than for TS and lack of influence asymmetries Un5 - higher relationalism, benevolence and interdependence.
Manipulative Leaders (ML) first type's counterpart competitive and opportunistic respondent firm is dominant.	(27%)	St3 - very similar to TS	Two subtypes of ML Un6 - strongly independent, counterpart may be dependent non-opportunistic, Un7 - higher interdependence with respondent dominant low in opportunism
Benevolent Independent (BI) very low opportunism and dependence. beneficial relation involving non-critical inputs.	(17%)	Possible subtypes St4 - low interdependence, but use influence St1 - more like mix of BI and CR	Un2 similar to TS,
Arm's Length Relationships (ALR) opportunistic, short lived asymmetric power, but low interdependence lack of close ties.	(14%)	St 5 - very similar to TS	Two possible subtypes Un8 – un-relational, opportunistic and independent, But influence of counterpart is high. Un3 Most similar ot ALR (distant, low relationalism) but quite dissimilar to TS Are benevolent and respondent heavily influences counterparts.
Close Relationships (CR) high relationalism, i.e. trust, cooperativeness, commitment, understanding, closeness, interdependence, benevolence longer lasting. Respondent usually dominant.	(25%)	St1 -Mix of BI and CR – they are more like each other in stable environments than in TS	Un1 very similar to TS

Conclusions

This research goes some way towards developing an empirically based taxonomy of types of business relations and one that takes into account aspects of relation dynamism. When we compare types of relations existing in stable versus unstable environments, more attractors appear to exist in unstable environments than in stable ones. Possibly this indicates there is a need for more tailored relationship "solutions" allow firms to cope with the challenges of unstable environments. For example, two distinct forms of Disgruntled Follower, Manipulative Leader and Arm's Length relations were found. This suggests that due to turbulence in a relationships' market environment, these generic relationship types may gravitate towards distinct variants. These variants reflect the way relations adapt to different and more challenging environmental conditions. In contrast to stable

environments, these variants emerge to more finely tune the uncollaborative/uncooperative relationship options. The subtypes of stable environments address finer gradation of benevolence.

These findings have important implications for researchers of business relationships and those participating within them. Business researchers must re-examine their assumptions about characterising relationships in a static way and incorporate consideration of the ways in which the relationships are likely to evolve –reproducing itself around a stable attractor or discontinuously and possibly towards new relationship states. This research highlights that the ways relationships will configure differs quite substantially depending on this and further highlights the need for researchers to move away from using static, unidirectional modelling techniques to study relationship evolution (Denize and Young 2007). The implications for managers are potentially even greater. One cannot *know* a relationship's future but to know the extent to which one can reasonably surmise the evolution of a relation is of immense value. Recognition of differential relational stability is an important first step, which can be extended by considering the different possible pathways for relationships to reach a stable form. While most papers addressing these types of research issues conclude by indicating that future research will incorporate longitudinal methods, this paper recognises the limitations attendant upon researchers and practitioners and instead promises to continue to look at the insights as to relationship evolution that can emerge from deeper consideration of relationship attractors in different relational contexts.

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