



Redes. Revista Hispana para el Análisis de
Redes Sociales

E-ISSN: 1579-0185

revista-redes@redes-sociales.net

Universitat Autònoma de Barcelona
España

de Nooy, Wouter

An institutional perspective on the micro-macro link

Redes. Revista Hispana para el Análisis de Redes Sociales, núm. 3, septiembre-noviembre, 2002

Universitat Autònoma de Barcelona

Barcelona, España

Available in: <http://www.redalyc.org/articulo.oa?id=93130108>

- How to cite
- Complete issue
- More information about this article
- Journal's homepage in redalyc.org

redalyc.org

Scientific Information System

Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal

Non-profit academic project, developed under the open access initiative

An institutional perspective on the micro-macro link

Wouter de Nooy - Erasmus University Rotterdam¹

Resumen

La relación micro-macro puede ser comprendida como un proceso dinámico en el que los actores interpretan los modelos locales de relación en tanto que indicadores o elementos de una estructura de conjunto, comunican sus interpretaciones y ajustan sus relaciones hacia la estructura tal como la perciben globalmente. En este artículo, se propone que los actores perciben las subestructuras locales en una red de evaluaciones, como las díadas, tríadas o semicírculos cortos e infieren agrupamientos y jerarquías de forma que son compatibles con los modelos de la teoría del equilibrio. Es decir, interpretan y comunican la información como clasificaciones simplificadas e idealizadas parecidas a bloques (*blockmodels*) respecto a los que ajustan sus relaciones a continuación. De este modo, las perspectivas ego-centradas y socio-centradas se relacionan de manera dinámica.

Esta perspectiva es aplicada a evaluaciones entre autores y críticos en las instituciones literarias. En el nivel micro, los autores literarios y los críticos ajustan sus evaluaciones a las evaluaciones precedentes. En el nivel global, la institución literaria es estratificada en conglomerados, por ejemplo movimientos literarios y estilos. Los miembros de esta institución se reflejan en su estructura: clasificaciones de acuerdo con el movimiento y el estilo son comunicadas y discutidas en la crítica literaria.

Palabras clave: relaciones micro-macro – redes sociales – estructura social.

Abstract

The micro-macro link may be regarded as a dynamic process in which actors interpret local patterns of relations as indicators or elements of an overarching structure, communicate their interpretations, and adjust their relations to the overall structure as they perceive it. In this paper, it is proposed that actors perceive local substructures in a network of evaluations, such as dyads, triads, or short semicycles, and infer clustering and ranking in ways that are compatible with balance-theoretic models. They interpret and communicate the information as simplified and idealized classifications resembling blockmodels, to which they adjust their relations afterwards. In this way, the ego-centered and socio-centered perspectives are dynamically related.

This approach is applied to evaluations among authors and critics in the literary institution. At the micro level, literary authors and critics adjust their evaluations to previous evaluations. At the global level, the institution of literature is stratified into clusters, e.g., literary movements and styles. The members of this institution reflect on its structure: classifications according to movement and style are communicated and discussed in literary criticism.

Key words: micro-macro relationships – social networks – social structure.

¹ Department of History and The Arts. Email: denooy@fhk.eur.nl

1. Introduction

In his comprehensive book on sociological theories, Randall Collins presents the cleavage between the micro and macro level of analysis as one of the key issues in contemporary sociology (Collins 1988). According to him, network analysis and network theories promise to bridge this gap (Collins 1988: Ch. 12). In this paper, I will explore the bridging potential of one particular network theory, namely, balance theory.

Balance theory originated in (social) psychology. Fritz Heider introduced this theory in his study of the relations and opinions of one person towards another person and a topic. People are hypothesized to feel more comfortable in a balanced situation, that is, a situation in which one agrees with a friend or disagrees with a person one dislikes (Heider 1958). This is clearly a theory at the micro level of the individual and his or her immediate social setting. A mathematician (Frank Harary) and a psychologist (Dorwin Cartwright) proved that balanced interpersonal relations yield a particular macrostructure: polarization (Cartwright and Harary 1956). A balanced network consists of two clusters such that all positive relations are found within clusters and all negative relations occur between clusters. In the perfect case, microstructure and macrostructure are logical counterparts, so we can exactly predict the macrostructure of a network from its microstructures and the other way around.

Empirical networks, however, are seldom perfectly balanced. Actors' local networks may display a tendency towards balance but they are rarely balanced. As a result, the macrostructure of a network is usually difficult to assess and far from unambiguous. Therefore, we should not consider macrostructure to be the logical counterpart of aggregated microstructures or assume the reverse. In this paper, I will argue that actors use microstructures in their interpretation of macrostructure and that they adjust their relations to macrostructure as they perceive it. Macrostructure is important as witnessed by attempts at capturing it in social classifications because it provides the rationale for micro action, e.g., for choosing between balance and unbalance.

In this paper, I will present a model for the dynamic interaction between microstructure and macrostructure, which I will apply to the institution of literature, viz., to the judgements that literary authors and critics pass on each other. Do authors and critics pursue balance in their immediate relations as predicted by Heider's theory? Do they adjust their evaluations to the macrostructure as they perceive or communicate it? I will pay special attention to the role of explicit social

classifications: classifications of authors according to literary style or movement which were published by authors and critics who are the actors in the network under investigation.

In the subsequent section, I will present my perspective on the micro-macro link. Next, I will elaborate a little on balance theory, introducing the ways in which I will measure balance and related models at the micro and macro level. Then, I will briefly sketch the data on literary authors and critics which I will analyze and the research design. Section 6 presents the results and a conclusion rounds off the paper.

2. Microstructure and macrostructure

Let me sketch my perspective on the micro-macro link before I present it in detail. First, I will argue that we should not regard macrostructure as a mere aggregate of microstructures. Social-psychological tendencies at the micro level are not strong enough and not consistent enough over all actors to produce a recognizable macrostructure automatically, that is, without deliberate effort on the part of the actors at creating a particular macrostructure. Microstructure cannot completely replace macrostructure.

Second, I will assert that macrostructure matters to individual action. People, I presume, do not solely pay attention to their direct and indirect relations. Establishing harmony (balance) or the opposite (unbalance) locally derives its significance from the wider environment of positions and the strategies available for improving or defending a position. The wider setting must be known in order to choose among different strategies. I am inclined to call this setting an institution because it is governed by particular norms, objectives, and strategies. The literary field offers an interesting example.

Finally, I will propose that actors infer macrostructure from microstructure and from classifications communicated to them. Rather than macrostructure per se, which may be chaotic and ambiguous, perceptions of it expressed as social classifications influence individual behavior. When individuals adjust their relations to the local structure and to perceived macrostructure, they change the microstructure and indirectly the macrostructure, which may give rise to adjusted classifications. Thus, I propose a dynamic model, which is graphically depicted in Figure 1. The concepts 'blockmodel' and 'semicycles' refer to the ways in which micro- and macrostructure will be analyzed. This will be explained in Section 3.

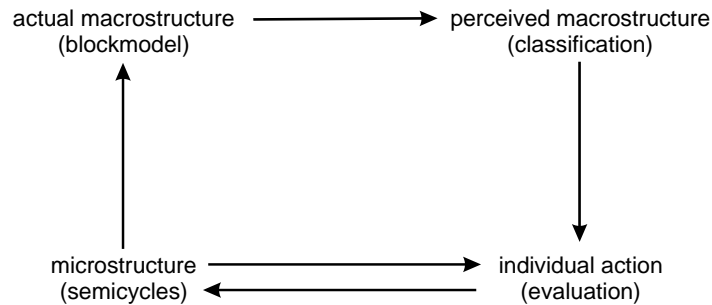


Figure 1. A model of the micro-macro link.

2.1 Macrostructure versus microstructure

In the introduction to this paper, I sketched the origins of balance theory in social psychology and its adaptation in network analysis. A fascinating aspect is the mathematical relation between microstructure and macrostructure. If all actors create perfectly balanced microstructures, the overall structure of the network is automatically balanced. At first sight, this corroborates the micro perspective: do not bother with macrostructure because it just results from goals and behavior at the micro level. A habit of liking the friends of your friends and disliking the enemies of your friends automatically produces polarization at the macro level. Of course, one could also argue the opposite, namely, that a polarized macrostructure is given in a (part of) society and that is the reason why local structure is balanced, so do not bother with the micro level.

In the perfect case, forces at the micro and macro level cannot be separated because they are 'perfectly' confounded. The empirical reality, however, is far from perfect and this offers the opportunity for distinguishing between effects of micro- and macrostructure. Fritz Heider postulated a tendency towards balance and this formulation shows that we are not supposed to expect perfect balance. An individual is hypothesized to feel uncomfortable in an unbalanced situation and s/he will tend to change the situation. But unbalanced structures may appear and if they do, individuals are faced with contradictions: one part of their local situation may require positive affection while another part may require negative affection to obtain balance. Each choice will produce new unbalanced microstructures.

If there is unbalance at the local level, the macrostructure does not display a regular balanced pattern. Moreover, some individuals may prefer creating unbalance, tension at the local level because they want to avoid polarization. As we will see in Section 3, balance is just one of the models from which individuals may choose. If some individuals create balance but others pursue other types of

microstructure, the overall structure of the network will be extremely complicated. As a matter of fact, we will see that it is quite difficult to determine the macrostructure of an empirical network (Sections 6.2 and 6.3).

A macrostructure predicted by balance theory will only emerge if sufficient individuals pursue the same microstructure. But why should they do so unless they have an interest in creating a particular macrostructure? In the next section, I will argue that individuals are interested in the macrostructure. For now, it suffices to conclude that there is a gap between micro- and macrostructure in empirical networks because they are far from perfect. As a result, microstructure and macrostructure may have distinct effects on an individual's action.

2.2 The importance of macrostructure

Why should individuals be interested in the macrostructure of their social system? The macrostructure expresses the stratification of a social system, the system of positions which are available. In Harrison White's metaphor, it is the pecking order and social identities depend on or are even created by their place in this pecking order (White 1992). Therefore, an individual or any other social entity needs to take into account the entire system of positions in order to determine its proper position and identity. In the terminology of Pierre Bourdieu's field theory, what matters is one's position relative to all other positions (Bourdieu 1983: 311-313).

It is quite likely that this mechanism is influential and clearly visible in cultural fields, where making a name relative to one's peers is the primary goal. It is no coincidence, I believe, that Bourdieu and White pay attention to art and literature (e.g., Bourdieu 1980 and 1983; White 1993). In art and literature, artists, critics, and other professionals are constantly evaluating and adjusting their relations. Through their relations, which range from cooperation to criticism, they determine the stratification of the artistic field: the ranking according to artistic prestige and clustering into artistic styles. Similar processes are operative in other fields of symbolic production, such as the academic field and politics.

Literary authors, for instance, have an interest in understanding the macrostructure in order to improve their positions in it. They have more strategies at their disposal than the pursuit of balance. A beginning author, for instance, may benefit from polarization because it produces antagonistic groups which are easily recognized by critics and other professionals. Polarization helps to attract attention, so the beginning author aligns with a group. Advanced authors, however, usually try to make a name for themselves and to dissociate from groups and their literary

stigmata. They refuse to be assigned to groups of authors which are associated with particular movements or style categories, so they will oppose polarization and clustering, creating unclusterable semicycles rather than balanced ones. These are two examples of common strategies within the institution of literature, which illustrate the fact that 'local' strategies depend on the position acquired or desired by an individual in the overall structure.

When we step outside the social-psychological laboratory, the goals and conditions are no longer set by the experimenter. They are inferred from the wider social system with special attention, I presume, to its stratification into ranks and clusters.

2.3 Perceived macrostructure

If individuals pay attention to macrostructure, how do they do that? It is not difficult to imagine someone noticing the relations and evaluations among his or her direct contacts. But how would an individual survey an entire social system or field, particularly if it is not likely to display a clear-cut structure? First of all, let us note that perceived macrostructure rather than the actual macrostructure may guide the behavior of individuals. The difference between actual and perceived macrostructure is not trivial, perception or rather interpretation is an act on the part of the individual. Therefore, it will be influenced by his or her preconceptions and interests.

If we concentrate on perceived macrostructure, communication is likely to tune the perceptions of different individuals. In the literary field, for instance, critics, scholars, and authors sometimes propose classifications of contemporary literature according to style or movement. These classifications may be regarded as attempts at describing the structure of the literary field. In a similar vein, short lists of nominations for a literary prize and top ten lists of best-selling books express a ranking within the field. In my opinion, these phenomena lend support to the assumption that members of the literary field pay attention to the overall structure of their system. At the same time, these publications communicate interpretations of the macrostructure and they quite often elicit reactions of people who agree or disagree.

In this paper, my focus is on social classifications which explicitly define social categories and assign authors and critics to them. I share an interest in the role of language in social organization with a new trend in cultural sociology which originated from the school of New Institutionalism. This new structuralist project in

cultural analysis, as it labels itself, focuses on an institutional logic as a shared classification connecting concepts to situations, organizations, or social groups (see Mohr 2000 for a charter). In other words, it focuses on the interplay between social structure and culture as a system of symbols or concepts. I will restrict myself to one particular kind of symbolic structure, viz., explicit classifications according to literary movement or style, and I will not include affiliations to organizations in my analysis. Nevertheless, I share the interest of the new structuralist project in the role of social classifications in the genesis and change of social structure.

Summarizing the argument, then, I model the relation between micro- and macrostructure as a dynamic interplay between perceived and communicated perceptions of macrostructure, individual action, the local structure of the network, and the overall structure of the network, which may give rise to altered perceptions and classifications. A clear-cut macrostructure does not emerge automatically; it requires deliberate action, e.g., public statements on its stratification. Interpretations of macrostructure by individuals and their strategies determine the evolution of the network as much as it is constrained by its existing shape. This approach resembles the models proposed by Ronald Burt (1982) or Alain Degenne and Michel Forsé (1999) with a stronger emphasis on the role of culture and social classifications.

3. Balance theory

In this paper, I analyze the link between microstructure and macrostructure in a network of affect relations, viz., evaluations among literary authors and critics. Balance theory deals with this type of social relations, which are modeled as signed networks because each line can have a positive or a negative sign indicating the nature of the affection. In the present section, I review balance theory and several balance-theoretic models for signed networks introducing the ways in which the models are measured and analyzed in this paper at the micro level and at the macro level.

3.1 Balance and clusterability

In 1946, Fritz Heider formulated the basic tenet of balance theory stating that a person tends to agree with another person whom s/he likes in all respects, whereas a person tends to disagree with someone s/he dislikes (Heider 1946). This situation is called balanced. In its original formulation, balance theory concerns the formation and transformation of affect relations between two individuals and a topic, which may represent a third person. Heider concentrated on the position and

perceptions of one person in this triangle or triple: what does s/he feel for the other person and what does s/he think is the other person's stance towards the topic or person? Rather than the actual affection or opinions of the other person on the topic, Heider studied the attribution of affections and opinions by one person to another.

Dorwin Cartwright and Frank Harary formalized balance theory by specifying exact criteria for 'triangles' of affect relations to be balanced: they are balanced if and only if they contain no negative lines or an even number of negative lines (Cartwright and Harary 1956). Furthermore, they moved from interpersonal relations and attributions towards measured affect relations within a group. If all semicycles are balanced, that is, they do not contain an uneven number of negative arcs, then the overall network is balanced and its vertices can be grouped into (a maximum of) two clusters such that all positive arcs are found within clusters and all negative arcs occur between clusters. Cartwright and Harary established a mathematical relation between microstructure, viz., semicycles, and macrostructure.

In my application to evaluations in literature, I analyze group structure rather than an individual's affections and attributions. My data are evaluations published in interviews and reviews which I suppose can be known to all literary authors and critics. In addition, I do not pay attention to topics, such as books or statements, but I restrict myself to direct evaluations between people. Therefore, I follow the approach of network analysts rather than Heider's social-psychological tradition of research.

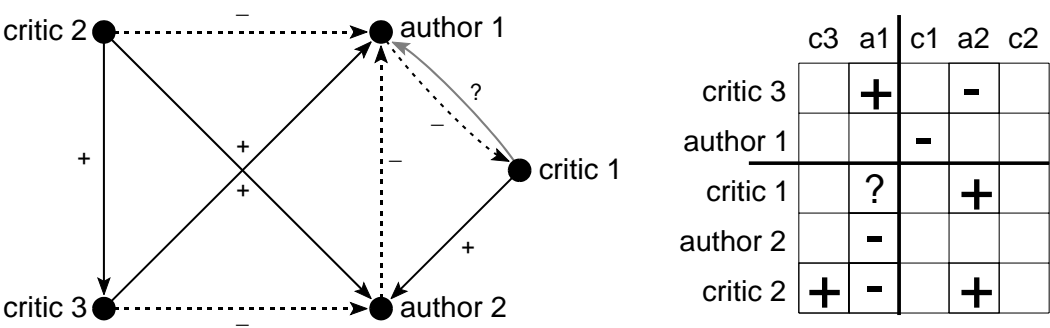


Figure 2. A network of affect relations as a signed graph and a matrix.

In the network approach, balance theory suggests that people pursue balanced semicycles or avoid unbalanced semicycles at the micro level. If they are free to choose between a positive and a negative affection or judgement, they will choose

the evaluation which will yield most balanced semicycles and least unbalanced semicycles. In Figure 2, for instance, critic 1 is going to evaluate author 1 (gray arc labeled by a question mark) in a little network containing two authors and three critics. The solid arcs represent previous positive judgements and the dotted arcs represent negative evaluations. If the critic only takes into account his or her direct relations, a negative evaluation would create a balanced dyad, that is, a balanced (semi)cycle of length two, because author 1 has passed a negative judgement on critic 1 before. A positive evaluation would yield an unbalanced (semi)cycle, so balance theory predicts a negative evaluation here.

Note that balanced semicycles of length two only take into account the evaluator and the evaluated. They represent the standard dyadic parameters reciprocity and conformity. In the example, balance theory predicts that a negative judgement is reciprocated by a negative judgement. If critic 1 would have evaluated author 1 negatively before, a new negative evaluation would conform to the previous judgement, again creating a balanced semicycle containing an even number of negative arcs.

If we extend the maximum length of semicycles, we increase the size of the local structure which the actor is supposed to survey and take into account. With semicycles of length three, we have to take into account the semicycle including author 2. Again, a negative evaluation by critic 1 of author 1 creates a balanced semicycle containing two negative arcs, whereas a positive evaluation creates an unbalanced semicycle with one negative arc. With this maximum length, two balanced semicycles are created by a negative arc whereas none is created by a positive arc from critic 1 to author 1.

In this paper, I count the number of balanced semicycles which are created if an actor passes a positive judgement and the number of balanced semicycles created by a negative judgement. I subtract the latter from the former to obtain the prevalence of balanced semicycles if a positive judgement is passed. A positive index indicates that a positive evaluation produces more balance than a negative evaluation, so balance theory predicts a positive judgement. According to balance theory, a negative index would be likely to yield a negative evaluation. In the current example, the index is -2, indicating that a negative arc is more likely because it produces more balance than a positive arc at the micro level.

In principle, the maximum length of semicycles can be raised to a level such that all semicycles and all actors in the network are included. This, I think, is not a good option if we want the semicycles to measure microstructure. For substantive and practical reasons, I restrict the analysis to semicycles of maximum length four. The shorter the semicycles, the more they represent the local structure around an actor. Since direct evaluations among authors and critics are relatively rare, however, the shortest semicycle is often of length four: including two authors and two critics. Substantially, it makes sense to pay attention to these semicycles because they express the position one critic takes vis-à-vis another critic.

At the macro level, balance produces one or two clusters of vertices such that all positive lines are found within clusters and all negative lines are situated between clusters. This pattern is best represented in a matrix, in which all actors are the entries of the rows and columns and each cell represents the relation from the actor in the row to the actor in the column. In Figure 2, the matrix represents the same network as the one drawn as a sociogram. The sociogram contains a positive arc from critic 3 to author 1, so the matrix contains a plus in the cell at the intersection of the first row, representing critic 3, and the second column, representing author 1.

The matrix is sorted and two fat lines separate the first cluster, containing author 1 and critic 3, from the second cluster, containing author 2 and critics 1 and 2. This clustering or partition divides the matrix into four blocks and we can easily see that the blocks representing the relations within clusters, the so-called 'diagonal blocks', contain positive arcs as required by balance theory. Since the new evaluation, which is marked by a question mark, is situated in an off-diagonal block, it connects members of different clusters, so it should be negative according to balance theory. From a macro level perspective, taking into account the structure of the entire network, critic 1's evaluation of author 1 should be negative in order to conform to a balanced macrostructure.

The partition of the matrix into clusters and blocks together with the criteria of balance theory that blocks along the diagonal contain all positive arcs and blocks off the diagonal contain all negative arcs, is called a blockmodel. In our example, this blockmodel does not fit perfectly because there is one positive arc in an off-diagonal block: the positive evaluation of critic 3 by critic 2. Positive arcs in off-diagonal blocks and negative arcs in diagonal blocks contradict balance theory. There are different ways of handling these exceptions or errors, which I will discuss in Section 0.

Why should human groups contain no more than two clusters of positive sentiments as predicted by the model of balance? Why not three or four? In 1967, James Davis generalized balance to clusterability, which allows any number of clusters such that positive arcs appear within clusters and negative arcs between clusters (Davis 1967). At the macro level, this simply extends the blockmodel of balance, which now may contain more than two clusters. At the micro level, Davis showed that one additional type of semicycle is allowed under clusterability, viz., the semicycle containing an uneven number of negative lines but more than one. A semicycle with one negative arc is unclusterable and contradicts the clusterability model.

Davis noted a minor complication with clusterability at the micro level. If the semipath which is closed by the new evaluation contains more than one negative arc, the sign of the new evaluation is irrelevant. In this case, the clusterability model does not have a preference for a positive or a negative sign. In Davis' words, an actor is structurally free in this situation and there is no latent tendency towards a positive or a negative sign (Davis 1967: 184-185). I will disregard these semicycles in the index calculated for clusterable semicycles.

3.2. Ranking

James Davis and Samuel Leinhardt's further extended balance theory to include ranking (Davis and Leinhardt 1968). Following George Homans (1950), they argued that people do not only cluster into groups but also create social ranking. In a complete signed network, that is, a signed network in which all relations are either positive or negative, they argued that an asymmetric dyad, a positive affect reciprocated by a negative affect, indicates ranking: the positive choice points up and the negative choice points down. In Figure 2, for example, a positive judgement by critic 1 on author 1 would create an asymmetric dyad ranking the author over the critic.

In a complete signed digraph, particular triads identify this model of ranked clusters. In incomplete digraphs, such as the one analyzed in this paper, I have shown which unclusterable semicycles span different ranks and which pairs of vertices must belong to different ranks: if an unclusterable semicycle can be split into two semipaths from one vertex to a second vertex such that all positive arcs point from the first vertex to the second and the only negative arc points in the opposite direction, the second vertex must be ranked over the first vertex (De Nooy 1999b: 271-275). An example can be found in Figure 2, viz., the semicycle

containing critic 2, author 2, and critic 3. This semicycle can be split in two semipaths from critic 2 to critic 3 according to the criteria specified above. As a consequence, this semicycle ranks critic 3 over critic 2 according to the ranked clusters model.

If the actors are somehow aware of this, they may evaluate the consequences of a particular judgement for their position vis-a-vis the other actor. If critic 1 evaluates author 1 positively, for instance, he submits to this author. This is also the case if critic 2 passes a positive judgement on critic 3 along the previous negative judgement. At the micro level, the number of semicycles which rank the sender under the receiver expresses deference. I hypothesize that actors will try to avoid this.

Note that the semicycles associated with deference are always created by a positive arc from the sender to the receiver. In these cases, a negative arc would simply yield a balanced semicycle, which is hypothesized to be the preferred choice. This illustrates the fact that ranking and, in general, unclusterable semicycles offer an alternative to balance and clusterability, that is, polarization or hostile groups.

An actor can rank himself over another actor by a negative evaluation, in which a positive path from alter to ego is closed by a negative evaluation. This is the case, for example, if critic 3 passes negative judgement on critic 2 in Figure 2. The number of these semicycles, which is equal to the number of positive paths from alter to ego, measures the attraction of passing a negative judgement in order to rank oneself over someone else. I hypothesize that this strategy is attractive, so actors in this situation will usually pass a negative judgement.

At the macro level, the ranked clusters model stipulates positive arcs within clusters (hence, in the diagonal blocks) but the relations between clusters are more complicated. Positive arcs may point up from clusters on a lower rank to clusters on a higher rank and negative arcs may point down. If the clusters are ordered from the highest to the lowest rank in the matrix, positive arcs are allowed to occur in the blocks below the diagonal and negative arcs may occur in the blocks above the diagonal (see Figure 3 for an example).

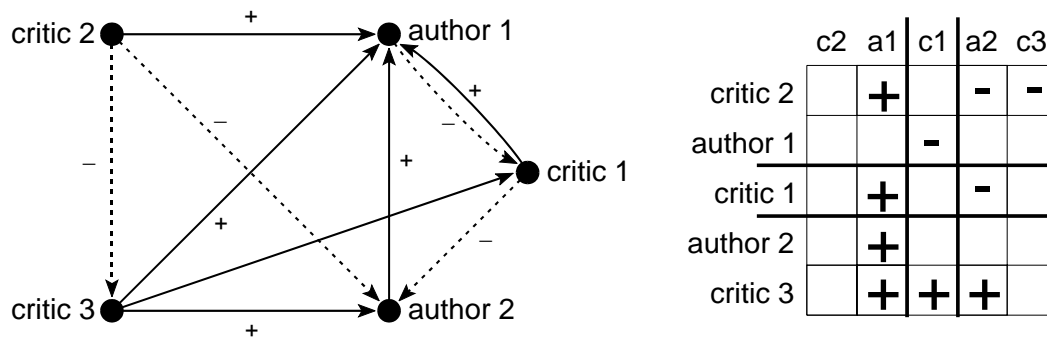


Figure 3. An example of ranked clusters.

Note that the overall structure of the network is needed to ascertain that a ranking makes sense, viz., that it is not cyclic. At the micro level, a tendency of avoiding balance and clusterability creates ranked clusters semicycles but that does not necessarily create a ranked macrostructure in which the ranks are correctly ordered. A consistent ranking demands that actors adjust themselves to a larger structure! In this paper, however, I do not analyze ranked blockmodels because a suitable tool is lacking at the moment.

Two additional balance-theoretic models have been proposed for unsigned digraphs and complete signed digraphs: the transitivity model (Holland and Leinhardt 1971) and the model of hierarchical M-cliques (Johnsen 1985). In an incomplete signed digraph, these models can be identified by particular combinations of semicycles or a particular type of unclusterable semicycle (De Nooy 1999b). I do not use these models here because they are quite complicated at the micro or macro level and they are probably less influential than the other balance-theoretic models.

4. The case

In the previous sections, I hinted at the kind of network which I will use for testing the model of the micro-macro link proposed in this paper. The data are evaluations among literary authors and literary critics in The Netherlands in the 1970s. In this case, the macrostructure is the literary field or institution and the microstructure is the immediate context of previous evaluations involving an actor directly or indirectly. One might argue that the literary field is not the macro level proper and that it is an instance of a very specific social system, which is concerned with the production of symbols, so it is neither representative for society as a whole nor for any social subsystem of society. I agree with this objection; we must keep in mind that we are dealing with the link between different levels in a specific type of field.

With this restriction, however, the Dutch literary field of the 1970s is an interesting case because there were several attempts at describing its macrostructure according to literary movements and styles by its members, some of which raised reactions and one classification even stirred a debate within the field. It was a turbulent period with a large influx of new authors and critics in the system. For a more extensive description, see (De Nooy 1991 and 1999a).

In the present paper, I concentrate on the two classifications of contemporary Dutch literary prose which appeared in the fall of 1977. One classification was proposed by a journalist (Brokken 1977) who interviewed four young authors; it stirred a debate in the literary field. The second classification was published by a senior literary critic in his introduction to a selection of contemporary short stories (Nuis 1977). This critic disagreed with Brokken's classification but the two classifications display substantial overlap (see Table 1). In this decade, more classifications of Dutch literary prose appeared, which also partially overlap with the two selected classifications.

I selected all literary authors who appeared in at least one classification according to movement or style published in the 1970s. Almost all authors made their appearance in the 1970s, so they are beginning authors. Next, I collected all evaluations in reviews and interviews passed on or by these authors. Then, I added the critics and authors who evaluated them to the case and I collected the evaluations among them in reviews and interviews. The final number of authors and critics was forty (see the Appendix in De Nooy 1999a). Finally, I coded the judgements on the basis of three categories: positive (+1), neutral (0), or negative (-1). The judgement score was based on explicit evaluations of and connotations associated with the critical terms used.

	Brokken				Nuis			
	Academism	Decadence	Anecdotal	Feminist	Ironie Realism	Exception	Literary- Theoretical	Marxist
Biesheuvel			+		+			
't Hart			+		+			
Heeresma					+			
Hotz					+			
De Jong			+		+			
Joyce&Co		+						
Kellendonk	+							
Van Keulen					+			
Kooiman	+						+	
Matsier	+						+	
Meijsing	+						+	
Meinkema				+				
Meulenbelt				+				
Plomp					+			
Portnoy				+	+			
Siebelink		+				+		
Vervoort					+			
Vogelaar								+

Table 1. Classification of authors by Brokken and Nuis.

Because the analysis concentrates on the two classifications published in 1977, I selected all evaluations which appeared in the two years before and after these classifications. These evaluations will be analyzed. **¡Error! No se encuentra el origen de la referencia.** summarizes the sign of the evaluations: more than half of them were positive, some neutral, and less than 30 percent were negative.

Sign	Frequency	Percent
Negative	113	28,9
Neutral	69	17,6
Positive	209	53,5
Total	391	100,0

Table 2. The sign of the evaluations in the period 1975-1979.

5. Design

My research design contains two parts: an analysis of the sign of evaluations and an analysis of literary classifications. The first part focuses on the interplay between structure and action at the micro level and perceived macrostructure: in their evaluations, do literary authors and critics take into account social structure at the micro or macro level? The second part concentrates on the similarities between perceived and actual macrostructure: do literary classifications reflect blockmodels of the overall network? Can we say that literary classifications reflect the

macrostructure of the network? In the following subsections, I elaborate both research designs.

5.1. The impact on evaluations

In the analysis of effects on individual behavior, the sign of the evaluation passed is the dependent variable. Neutral evaluations are excluded.² This approach is slightly different from regular statistical modeling of social networks, e.g., with p^* models (Wasserman and Pattison 1996) or Markov Chain Monte Carlo simulation (Snijders 2001), which intend to explain the presence or absence of a relation. In contrast, I assume that the relation is present – X will evaluate Y – and I try to explain the sign of the evaluation. There is a substantive reason for this approach. The appearance of a new book by an author is normally the occasion for critics for publishing a review or an interview with an author. Therefore, the publication of books largely determines the presence and absences of evaluative ties. The sign of the evaluations, however, is not fixed by these circumstances and it may well be guided by balance-theoretic considerations.

Logistic regression is used for predicting the (log) odds of a positive evaluation over a negative evaluation. A positive effect of an independent variable signifies that a higher score raises the odds that a positive evaluation is passed whereas a negative effect implies that a higher score increases the likelihood of a negative evaluation. The sign of the evaluation is predicted by a series of variables representing the microstructure, two variables related to the perceived macrostructure, and a single attribute of the person passing the judgement. I will describe these variables now in more detail.

The local or microstructure of the network around the judge and the person judged is primarily measured by semicycle counts which express the amount of balance or clusterability introduced by a positive evaluation in contrast to a negative evaluation or direct ranking (deference or submission) as explained in Sections 3.1 and 3.2. For these variables, evaluations of the previous 24 months were used. Results for shorter periods, viz., 12 and 6 months, were compared and yielded similar but weaker effects because the network was even more sparse. Evaluations in the 6 days preceding the evaluation under consideration were excluded because

² I tried to predict the occurrence of neutral evaluations from 'deadlock' situations in which a positive as well as a negative evaluation yields many unwanted unbalanced or unclusterable semicycles but this did not yield any results.

it is unlikely that an actor could have taken them into account. In order to analyze evaluations in 1975, evaluations in the preceding two years were included in the data set. As noted before, semicycles up to and including length four were counted.³

Previous direct evaluations are scarce, so the conformity and reciprocity variables have very many zero scores. In the analyses, reciprocity did not seem to have an effect in contrast to conformity, which confounded the effects of classifications because it probably covered relatively static or enduring patterns associated with literary classifications. Since conformity and reciprocity are special cases of balance or ranking, I decided to join them with the structural variables expressing balance and ranking. In addition, I merged balance and clusterability in order to obtain a more even distribution. Still, two cases had very extreme values on several structural variables; they were omitted from the analyses.

In addition, two standard structural variables were included: popularity, which was measured as the number of previous evaluations and expansiveness as the number of judgements passed by the evaluator in the preceding period. Initially, popularity was measured as the total number of evaluations, including neutral evaluations, expressing the attention received by the evaluated author and it was also measured as the number of previous positive evaluations, expressing esteem. Due to the prevalence of positive judgements, however, the two indices correlate strongly ($R = .95$), so I decided to use one of the two popularity variables, viz., attention, in the final analysis.

The two literary classifications published in the fall of 1977 represent perceived macrostructure. They cluster authors into literary classes, e.g., movements or style groups, and these classes are used for calculating the variables which indicate the degree to which a positive evaluation conforms more to the blockmodel implied by the classification – positive evaluations within groups, negative evaluations between groups – than a negative arc. This follows the logic of the variables representing balance and clusterability: if a positive evaluation conforms more to the clustering suggested by the literary classification, the variables have a positive value and a positive evaluation is expected, whereas they have negative values predicting a negative evaluation if a negative evaluation produces a local structure

³ The tedious task of counting semicycles and calculating the variables was executed automatically by a software program (operating under Windows 95), which is available from the author of this paper.

conforming to the classification. Therefore, a positive effect of the classification variables on the sign of the evaluation shows that the evaluation conforms to the literary classification.

Conformity to the literary classification was measured directly and indirectly. The direct effect may occur when the person passing the evaluation and the evaluated person were both classified. If they were thought to belong to the same literary class, a positive evaluation is expected, so the direct classification variable for this relation was coded as 1. Members of different classes are expected to pass negative judgement on one another, so the variable was coded as -1 in this case. If the evaluator and the evaluated were not both classified, the direct classification variable was coded as 0, which expresses no preference for a positive or negative evaluation.

The indirect impact of classification was measured by the prevalence of clusterable semicycles conforming to the classification created by a positive evaluation over the number created by a negative evaluation. A clusterable semicycle was thought to conform to a classification if it connected at least two classified actors belonging to the same literary class by a positive semipath or two authors classified into different classes by a semipath with exactly one negative evaluation, whereas no pair of classified actors was connected in the wrong way (no members of one class connected by a semipath with one negative evaluation and no members of different classes connected by a positive semipath). Direct and indirect classification variables are moderately associated (R between .5 and .6).

Both direct and indirect classification variables were measured prospectively and retrospectively. A prospective classification variable shows the conformation to a classification which has not yet appeared in print. The classification is 'latent' and it is made manifest by the publication later. A retrospective classification variable measures the conformity of an evaluation to a published classification; it is meant to capture the extent to which an actor may take this publication into account. Summing up, there are four variables capturing the classification as a perception of macrostructure: direct and indirect prospective classification, direct and indirect retrospective classification.

Finally, the role of the person passing the judgement is captured by a variable distinguishing between authors, who may also act as a critic, and 'pure' critics. Due to their role, critics pass judgement more often than authors and they are very unlikely to be classified according to movement or style.

5.2. Perceived and actual macrostructure

The logistic regression analysis explores the relation between a literary classification, representing perceived macrostructure, and individual action. It does not, however, test the relation between a classification and actual macrostructure, that is, the overall structure of the network. Do classifications actually reflect macrostructure? In order to answer this question, the overall network of evaluations was subjected to blockmodel analysis.

Blockmodel analysis determines the blockmodel which fits the structure of a network best. As noted before (Section 3), a blockmodel assigns the vertices (in this case, the actors) of the network to clusters such that the relations within and between the clusters display a clear pattern. In the case of our network of literary evaluations, we expect the typical balance-theoretic pattern: positive evaluations within clusters and negative evaluations between clusters. Once the blockmodel of the network is obtained, we can simply compare its clustering of authors to the clustering suggested in the literary classification to determine their association. To which extent does the classification match the structural positions of authors?

At present, two blockmodeling techniques are available for signed networks: stochastic blockmodeling (Nowicki and Snijders 2001) implemented in the software program *blocks*⁴ and an optimization technique (Doreian and Mrvar 1996) incorporated in *pajek* software⁵. In the current application, the main distinction between these two approaches is that the optimization technique fixes the type of relations within and between clusters according to balance theory, whereas the stochastic approach does not fix this and may come up with a blockmodel in which the relations within and between clusters is completely different from balance-theoretic models.⁶ I used both approaches. The results are reported in Sections 0 and 0.

Blockmodel analysis was applied to the networks consisting of the evaluations in the 12 months preceding and following on the publication of the classifications. Brokken's classification appeared on September 10, 1977 and Nuis' book appeared in October of the same year. Since a book has a longer production time than an article in a weekly magazine and its date of appearance is more fuzzy, I will use the

⁴ Available from <http://stat.gamma.rug.nl/snijders/socnet.htm>.

⁵ Available from <http://vlado.fmf.uni-lj.si/pub/networks/pajek/default.htm>.

⁶ Please note that there are much more important methodological differences between the two approaches for which I refer the reader to the references.

same period and networks for both evaluations, viz. before and after September 10, 1977.

6. Results

This section reports the final results of the analyses.

6.1 Logistic regression

Each evaluation which was passed among the selected authors and critics in the period 1975-1979 was a unit in the logistic regression analysis and the evaluation's sign was predicted from the microstructure, a classification communicating a macrostructure, and the role of the evaluator as explained in Section 0. The two classifications (by Brokken and by Nuis) were analyzed separately. Of course, different results are only expected for the classification variables unless they confound the effects of other variables. Independent variables were added to the regression equation one by one according to their contribution to the (pseudo) log likelihood of the model, including all main effects and all interaction effects with role. After the first analysis, three cases were omitted, which were extremely badly predicted.

Step	Parameter	B	S.E.	df	Sig.	Exp(B)	-2 Log likelihood	Cox & Snell R ²	Nagelkerke R ²
0	Constant	.323	.154	1	.036	-	406.71	-	-
1	Role (critic)	.967	.281	1	.001	2.631	388.25	.057	.078
2	Clusterability	.061	.016	1	.000	1.063	373.99	.098	.136
3	Ranking under (indirect)	.301	.077	1	.000	1.351	354.44	.152	.210
4	Prospective classification (indirect)	.107	.040	1	.007	1.113	346.76	.172	.238
5	Clusterability by Role (critic)	.070	.031	1	.021	1.073	341.32	.186	.258

Table 3. Logistic regression results with Brokken's classification (N = 317).

** The table contains the final parameter estimates in the equation containing all five parameters (and the constant).

Table 3 summarizes the results with Brokken's classification. The role of the evaluator had the strongest effect on the sign of the evaluation: critics were more often positive than authors. Authors are probably more critical because they need a special reason for passing explicit judgement on their peers, which may well be

something they dislike about the work of their colleagues. Critics are evaluators by profession, who prefer telling their readers about the books and authors they like than about the ones they dislike.

The addition of role to the equation changed the effects of some variables. The effect of expansiveness decreased, which is explained by the fact that critics were more active than authors and more positive at the same time. The effect of direct (prospective and retrospective) classification also diminished. 'Pure' critics were never classified, so their relatively positive judgments fill the 'unclassified' category in the middle, lowering the association between positive evaluations and within-group evaluations.

In the next step, clusterability, including balance, conformity, and reciprocity, was added to the regression equation. The expected positive effect indicates that the evaluation producing more balanced or clusterable semicycles was slightly favored. Inclusion of this effect in the equation did not change the effect of other variables, so we may conclude that it is an independent effect of microstructure. If used separately, conformity was a strong but troublesome variable whereas reciprocity had no significant effect.

In the third step, the indirect upward choices variable was added to the equation, ranking the evaluator under the evaluated person. Counter to the hypothesis, the effect was positive, indicating a tendency to prefer evaluations which express deference, rather than a tendency to avoid them. In the literary field, showing respect seems to be a honorable course of action. The indirect ranking variable further lowered the effects of expansiveness, popularity, and indirect retrospective classification. This makes sense since the popular authors are likely to be the ones to whom respect was being paid and because the most prolific evaluators – usually critics or author/critics – are the ones who paid respect. The impact on the effect of indirect retrospective classification is not obvious.

Then, the variable representing the indirect conformation to a classification published later was added and it had the hypothesized positive effect. Authors and critics prefer the evaluations which cluster authors according to the classification published later by Brokken. The impact of direct prospective classification was partly covered by this variable, which is hardly a surprise.

Finally, role interacts with clusterability: critics tend to create slightly more clusterable or balanced semicycles than authors. Seemingly, authors feel more free to create unbalance, which may be an attempt at ranking or just avoidance of polarization and clustering because authors want to make a name for themselves. At this stage, all remaining variables have low significance levels; direct retrospective classification and its interaction with role have the highest significance (.112). Note that the explanatory power of the equation is rather poor: the (pseudo) log likelihood ratio decreased from 407 to 341 and the approximations of the explained variance ranges between one sixth to a quarter.

Step	Parameter	B	S.E.	df	Sig.	Exp(B)	-2 Log likelihood	Cox & Snell R ²	Nagelkerke R ²
0	Constant	.406	.163	1	.013	-	404.54	-	-
1	Role (critic)	.562	.282	1	.047	1.754	385.50	.059	.081
2	Clusterability	.072	.018	1	.000	1.075	370.42	.102	.142
3	Ranking under (indirect)	.328	.084	1	.000	1.388	350.24	.158	.219
4	Retrospective classification (indirect)	.238	.079	1	.003	1.269	332.35	.204	.283
5	Retrospective classification (indirect) by Role (critic)	-.309	.156	1	.048	.734	325.68	.221	.306

Table 4. Logistic regression results with Nuis' classification (N = 316).*

* The table contains the final parameter estimates in the equation containing all five parameters (and the constant).

The analysis with Nuis' classification instead of Brokken's classification (excluding four extreme cases) yielded similar results (see Table 4). Initially, the prospective direct classification effect was very significant (.006) but it was strongly confounded with the role of the actor passing the judgement and it gradually lost more strength when other variables were added until it had a significance level of .052 in the end. In the fifth step, the interaction effect of indirect retrospective classification with role was a fraction stronger than the interaction effect of clusterability with role. Authors adjust their evaluations more strongly to the previous classification by Nuis than critics as indicated by the negative sign of the parameter estimate. After step five, the significance of the interaction effect of clusterability and role had dropped to .105, so it was no longer a candidate for inclusion.

Inspecting the results, we may conclude that microstructure matters: there was a marked tendency towards clusterability. Indirect effects seemed to be more important than direct, dyadic effects because the network was not very dense, so many evaluations could not conform to or reciprocate previous evaluations, even

looking back over a long period of two years. The results support the idea that authors and critics surveyed their ego-networks. In addition, there was a tendency towards submission rather than a tendency of avoiding it: authors and critics pay respect.

At the macro level, classifications play a role: Brokken's classifications reflected a latent classification which guided evaluations before it was published. Nuis' classification, however, primarily had effects on later evaluations, notably judgements passed by authors. Perhaps, actors agreed with this classification because it was proposed by a 'real' critic and not by a journalist.

The results of the logistic regression analyses show that both microstructure and perceived macrostructure expressed as a classification according to literary movement or style, explain the sign of evaluations partly. One classification predominantly reflected a latent clustering whereas the other classification affected the sign of subsequent evaluations, although we should note that the explanatory power is quite limited (25 to 30 percent). The results support the assumed dynamical interplay between micro and macrostructure.

6.2 Stochastic blockmodels

The stochastic blockmodel proposed by Krysztof Nowicki and Tom Snijders (2001) postulates a latent class structure for a network in which blocks are characterized by one or more types of dyads which occur at relatively high or low probabilities. If the network contains one signed relation, nine types of dyads are possible, which are listed in Table 5. In this table, the last three types of dyads are just the reverse of dyad types numbers three to six. Note that the network of evaluations is rather sparse, since the null dyad (0,0) occurs very often.⁷

The algorithm identified three blocks in the 24 months preceding the classifications: a large block of authors (and one critic) who were 'net receivers' because they had a high probability of receiving unilateral positive evaluations from the other large block, which contained most 'pure critics', and they received unilateral negative evaluations from the third, small block, containing two 'troublesome' author-critics ('t Hart and Meinkema). The two author-critics in the third block received unilateral evaluations from the large block of critics, either positive or negative, and

⁷ When multiple evaluations occurred, the last evaluation was selected in the year preceding the classifications and the first evaluation in the year following the classifications.

incidentally answer a positive evaluation by a negative evaluation. Within the block of 'pure critics', unilateral negative evaluations occurred more often than predicted by chance.

Dyad	24 months		12 months	
	Before	After	Before	After
(-, -)	1	3	1	1
(0, 0)	656	693	715	733
(+, +)	1	4	1	2
(-, 0)	41	27	21	12
(-, +)	3	2	2	1
(0, +)	78	51	40	31
(0, -)	41	27	21	12
(+, -)	3	2	2	1
(+, 0)	78	51	40	31

Table 5. Types of dyads and their frequencies.

The analysis of the two-year period following on the publication of the classifications yielded similar results: two large clusters mainly separated the authors from the critics and a small cluster was found with one or two 'troublesome author-critics.' The stochastic blockmodel nicely distinguished between the two roles in the network but it did not discriminate among the authors. The relations within the block of authors were characterized by a high probability of null dyads; the absence of relations dominated the blockmodel rather than a pattern of positive and negative relations. The sparseness of the network was probably responsible for this. As a consequence, no differentiation was found among the authors which could be compared to their clustering in the literary classifications. Even a priori identification of the blockmodel by authors belonging to different literary classes could not change that: it was overridden by the blockmodeling algorithm, yielding the blockmodel presented above.

An analysis of the evaluations published in a period of 12 months did not yield substantially different results. Since these networks were even more sparse than the two-year networks, it was even more difficult to find types of dyads other than the null dyad characterizing the blocks. When the analysis was restricted to the authors and the evaluations among them in the previous 24 months, two clusters were found, one small and the other large. The small cluster contained four authors who were also critics ('t Hart, Luijters, Meinkema, and Vogelaar) and it was characterized by relatively many negative evaluations within the cluster and unilateral evaluations either positive or negative to the other cluster. Again, the active evaluators were separated from the rest. In the period following on the

classifications, the small block contained authors who were assigned to the 'Academism' style by Brokken and to the 'Literary-Theoretical' style by Nuis. In the network, this cluster was characterized by relatively many evaluations among them, which were mainly published in their interviews with Brokken.

In the sparse networks of evaluations, stochastic blockmodeling as implemented in the software blocks did not cluster authors according to positive relations within and negative relations between clusters. It seemed to take into account mainly the density of relations. This did not offer an opportunity to compare the blockmodels to the literary classifications.

6.3 Optimized blockmodels

The optimization approach to partitioning signed digraphs proposed by Patrick Doreian and Andrej Mrvar (1996) disregards absent relations. It searches for an optimal partition of vertices into clusters such that positive arcs are situated within clusters and negative arcs between clusters. In the present case, the vertices represent the authors and critics and the arcs are evaluations.

In contrast to stochastic blockmodeling, the optimization approach usually yields several or many equally well-fitting partitions. This happens especially if the network contains isolated vertices, which can be assigned to any cluster, or vertices which are connected to the main part of the network by a single negative arc. The latter vertices can be assigned to all clusters except for the cluster of the neighbor to whom they are connected by a negative arc. Therefore, I restricted the analysis to the bi-components of the network. If the optimization still yields many equivalent optimal partitions, an additional analysis is needed to extract one 'common' clustering from these partitions. I used (average within groups link) hierarchical clustering for this purpose.

In the optimization approach, just like the stochastic approach, the researcher has to specify the number of clusters of the blockmodel beforehand. I tried several numbers of clusters, but I will only report the results for the number of clusters which matches the number of classes in the classifications which are represented in the bi-components of the network, which is four or five including a residual category for the unclassified authors.

For the preceding 12 months, that is, September 1976 to September 1977, the optimization technique detected at least 31 optimal balanced partitions with four classes.⁸ A hierarchical clustering of these partitions yielded 5 clusters, which were moderately associated with the classifications published by Brokken and by Nuis. Compared to Brokken's classification, the blockmodel correctly clustered the two Feminist writers (Meulenbelt and Meinkema), isolated the Decadent writer (Siebelink) but it joined the Academists (Kellendonk, Kooiman, and Matsier) with the Anecdotal writers ('t Hart and De Jong). The uncertainty coefficient with Brokken's classification as the dependent variable is .68 (see Table 6). The uncertainty coefficient for the association with Nuis' classification is .69 because the Marxist writer (Vogelaar) and the 'exception' Siebelink were correctly isolated. The Theorists were incorrectly merged with half of the Ironic Realists.

Classification	Uncertainty coefficient (4 or 5 clusters)	
	Prospective (classification dependent)	Retrospective (blockmodel dependent)
Brokken	.68	.22
Nuis	.69	.68

Table 6. Association between blockmodels and literary classifications.

For the subsequent 12 months, I found 52 optimal balanced solutions with four clusters.⁹ The predictive power of Brokken's classification is very bad (uncertainty coefficient is .22). This result corroborates a result of logistic regression analysis, viz., that Brokken's classification was associated with evaluations in the previous period rather than in the subsequent period. The predictive power of Nuis' classification for the blockmodel is higher: the uncertainty coefficient is .68 because the Ironic Realists and the Marxist were correctly identified, but two out of the three Literary-Theorists were joined with the Ironic Realists – Kooiman was the only Theorist who was separated from the main cluster of Ironic Realists. It is interesting to note that he was regarded as the spokesman of his literary group at that time.

⁸ The partitions had 5.5 errors with equal penalties (alpha = .5) for erroneous positive and negative arcs, 1000 iterations.

⁹ 4.5 errors, alpha = .5, 1000 iterations.

Table 6 summarizes the results. We may conclude that both classifications are in line with partitions of the overall network according to balance theory at the time of their publication. This result lends some support to the assumption that actors are trying to interpret and articulate the current macrostructure in their classifications. It is fair to say, however, that the association is based on a small number of authors. Literary classifications do not explicitly name many authors and some of them drop out of the analysis because they are isolated or nearly isolated in the network of evaluations. The 'correct' classification of one or two authors suffices for obtaining the uncertainty coefficients found here.

In addition, the blockmodel of the macrostructure was far from simple. Many equally good optimal partitions were found yielding a coarse (hierarchical) clustering. The macrostructure was not clear-cut, so it is unlikely that the participants took into account macrostructure per se. I surmise that they perceived parts of the overall structure which were salient to them although they did not have to be directly involved. From these parts, they constructed their images of the macrostructure. This is a major difference with the perception of the ego-network as the relevant microstructure in the logistic regression analysis. Brokken, for instance, was not a player in the network, passing or receiving evaluations. Still, he surveyed the field and proposed a classification which covered part of the network's macrostructure.

7. Conclusion

This paper investigates the link between microstructure and macrostructure. A model is proposed in which the interpretation of macrostructure and the exchange of interpretations through communication is assumed to be more important than macrostructure per se. This model is tested on the literary field, on the quality judgements which were passed among literary authors and critics in The Netherlands in the 1970s. The results lend support to the model and I will summarize them below but let me stress first that the results are not very strong, notwithstanding the fact that they are statistically significant. The structure of evaluations at the micro level and at the macro level explains what is going on for a limited part. Perhaps, the structure should be extended to include other types of relations, e.g., affiliations to literary magazines and publishing houses. Also, attributes of the actors could be added to the analysis, for instance, their seniority in the literary field or their age, social generation.

In the analysis aimed at explaining the sign of evaluations passed among authors and critics, I found that microstructure and perceived macrostructure played a role. Authors and critics tended to pass the judgement which created balance or clusterability. They seemed to take into account previous evaluations in their immediate environment; the local microstructure affected evaluations. Group processes predicted by balance theory were operating. In addition, the authors and critics displayed a tendency towards deference. Literary criticism is a 'respectful' world, authors and critics do not mind expressing admiration for someone who passed negative judgement before.

Evaluations were related to literary classifications according to movement or style published in the near past or future: in particular, semicycles of length three or four coincided with classifications. Direct evaluations conformed to literary classifications to a lesser extent, perhaps because they were less frequent. Latent or manifest classifications guided the evaluations of the actors because they showed preference for the judgement which created a microstructure that conformed to the clustering or rather the blockmodel implied by the classification. In our two examples of literary classifications, the stronger effect was once found before the publication and once after the publication of the classification. The publication of a literary classification probably triggered a discussion leading to its acceptance, that is, conformation of new evaluations to the proposed classification, or rejection. The status or prestige of the person proposing the classification seemed to be relevant to its acceptance or rejection.

As a clustering of literary authors according to style or movement, a literary classification can be regarded as a proposition about the artistic stratification of the literary field. But do they reflect or anticipate the actual structure of the network, its macrostructure? In order to answer this question, the structure of the overall network was analyzed with two blockmodeling techniques. Blockmodeling the overall network of evaluations turned out to be quite complicated. Stochastic blockmodeling uncovered the structural consequences of the two main roles in the field: authors, who received evaluations rather than passed them, and critics, who predominantly passed judgement. Optimized blockmodeling of the network in the 12 months preceding or following on the classifications produced many equally good solutions, even when actors with ambiguous position such as isolates were removed from the analysis. Nevertheless, the optimized blockmodels were moderately associated with the literary classifications, lending some support to the

claim that literary classifications reflect or anticipate the macrostructure of the network.

The overall structure was either trivial or too complex to be easily surveyed by the investigator, so we should not expect the members of the field to be fully aware of the field's macrostructure. At best, actors notice subsections of the network which are salient to them and infer a more or less personal image of the entire structure from these bits and pieces. Literary classifications express these partial views and publication spreads them to other actors helping them to attune their views of social structure. Thus, language and communication play a part in the genesis and maintenance of social structure.

Bibliography

Bourdieu, P. (1980). "The production of belief; contribution to an economy of symbolic goods", *Media, Culture & Society*, 2, 261-293.

— (1983). "The field of cultural production, or: the economic world reversed", *Poetics*, 12, 311-356.

Brokken, J. (1977). "Het Academisme in de literatuur: Matsier, Meijsing, Kooiman en Kellendonk op zoek naar een methode [Academism in literature: Matsier, Meijsing, Kooiman, and Kellendonk in search of a method]", *Haagse Post* (September 10).

Burt, R. S. (1982). *Toward a structural theory of action: Network models of social structure, perception, and action*. New York: Academic Press.

Cartwright, D., & Harary, F. (1956). "Structural balance: A generalisation of Heider's Theory", *Psychological Review*, 63, 277-293.

Collins, R. (1988). "Network Theories", en R. Collins (Ed.), *Theoretical Sociology* (pp. 411-448). San Diego: Harcourt Brace Jovanovich, Publishers.

Davis, J. A. (1967). "Clustering and structural balance in graphs", *Human Relations*, 20, 181-187.

Davis, J. A., & Leinhardt, S. (1968). "The structure of positive interpersonal relations in small groups", Annual Meeting of the American Sociological Association. Boston, Massachusetts.

De Nooy, W. (1991). "Social networks and classification in literature", *Poetics*, 20, 507-537.

— (1999a). "A literary playground. Literary criticism and balance theory", *Poetics*, 26, 385-404.

- (1999b). "The sign of affection: Balance-theoretic models and incomplete signed digraphs", *Social Networks*, 21, 269-286.
- Degenne, A., & Forsé, M. (1999). *Introducing social networks*. London [etc]: SAGE.
- Doreian, P., & Mrvar, A. (1996). "A partitioning approach to structural balance", *Social Networks*, 18, 149-168.
- Heider, F. (1946). "Attitudes and cognitive organization", *Journal of Psychology*, 21, 107-112.
- (1958). *The Psychology of Interpersonal Relations*. New York: John Wiley and Sons.
- Holland, P. W., & Leinhardt, S. (1971). "Transitivity in structural models of small groups", *Comparative Group Studies*, 2, 107-124.
- Homans, G. C. (1950). *The Human Group*. New York: Harcourt Brace.
- Johnsen, E. C. (1985). "Network macrostructure models for the Davis-Leinhardt set of empirical sociomatrices", *Social Networks*, 7, 203-224.
- Mohr, J. W. (2000). "Introduction: Structures, institutions, and cultural analysis", *Poetics*, 27, 57-68.
- Nowicki, K., & Snijders, T. A. B. (2001). "Estimation and prediction for stochastic blockstructures", *Journal of the American Statistical Association*, 96, 1077-1087.
- Nuis, A. (1977). "Inleiding [Introduction]", en A. Nuis (Ed.), *Korte verhalen uit de jaren zeventig [Short stories from the seventies]*. Amsterdam: Elsevier.
- Snijders, T. (2001). "The statistical evaluation of social network dynamics", *Sociological Methodology*.
- Wasserman, S., & Pattison, P. (1996). "Logit models and logistic regressions for social networks .1. An introduction to Markov graphs and p^* ", *Psychometrika*, 61, 401-425.
- White, H. C. (1992). *Identity and control; A structural theory of social action*. Princeton, New Jersey: Princeton University Press.
- (1993). *Careers and creativity: Social forces in the arts*. Boulder Colorado: Westview Press.