

Social Exchange Networks: A Review of Experimental Studies

Sabine Neuhofer
University of Vienna
Vienna, Austria

Ilona Reindl
University of Vienna
Vienna, Austria

Bernhard Kittel
University of Vienna
Vienna, Austria

Abstract

This article surveys laboratory experiments on social exchange networks. The method of laboratory experiments is prominent in this field. The various theoretical perspectives informing the experiments are grouped into three approaches: the first, dominated by network-exchange theory, is mainly concerned with power and structure, the second discusses social-psychological approaches and emphasizes behavioral and psychological dimensions such as reciprocity, emotions and cohesion, and the third is concerned with game-theoretic experiments embedded in network structures.

Keywords: *social exchange; network; laboratory experiment*

Authors

Sabine Neuhofer is a researcher in the Department of Economic Sociology, University of Vienna, Vienna Austria.

Ilona Reindl is a researcher in the Department of Economic Sociology, University of Vienna, Vienna Austria.

Bernhard Kittel is a professor in the Department of Economic Sociology, University of Vienna, Vienna Austria.

Notes

We thank an anonymous referee as well as Roman Hoffmann and Manuel Schwaninger for helpful comments.

Correspondence concerning this work should be addressed to Bernhard Kittel, Department of Economic Sociology, University of Vienna, Oskar-Morgenstern-Platz 1, 1090 Wien, Austria or by email: bernhard.kittel@univie.ac.at

1. Introduction

Social exchange theory focuses on the distributive and allocative effects of human interactions within boundaries determined by the structure of the network. It is closely linked to social network analysis, which studies relational and structural aspects of networks. By providing theoretical explanations for behavioral patterns in network settings, social exchange theory complements and extends the scope of classical social network analysis. Over the past 40 years, theoretical and experimental studies have shed light on the variety of factors, which influence exchange in networks. Structurally induced power differences, emotions, commitment, trust, fairness preferences, status, coalition formation and the sequence of exchange are only a few of the factors that have been

considered. The experimental evidence presented in this article underlines the potential benefit of considering the social and behavioral preferences of agents in a network. Furthermore, social exchange research provides insights with respect to explaining why networks observed in the real world assume specific forms, why some links are used more often than others and some are dropped entirely, and how networks can be influenced through institutions in order to manipulate the flow of resources, specifically knowledge and information. The diversity of theories having been developed and tested experimentally thus complements classical social network analysis.

We organize the literature along three broad categories: 1) *Network Exchange Theory* and its variants, 2) theories with affinity to social psychology, and 3) theories using a game theoretic approach. The first

category of theories and experiments focuses mainly on structure and power in networks. Their research interests and the concepts they use are relatively close to classical social network analysis. The second category of the global structure of the network to the level of the networks. They focus on strategic choices and network formation and put again more emphasis on the structure of psychological approaches are also advancements of exchange can be found in a variety of different settings such as the following: 1. In a laboratory setting, agents exchange resources through some form of exchange and exchange is recurring over time. Resources can range from tangible goods to intangible goods such as status or approval. Most variants of exchange theory assume homogenous utility within the constraints of the network structure allowing for heterogeneity in the values of edges or in agents' characteristics.

The empirical evidence presented in this article has been gathered exclusively in laboratory experiments. Social exchange research is thus among the pioneers in sociology in using this method for whole research programs. Laboratory experiments are well suited to examine social exchange network as they allow for highly controlled circumstances and exact comparison. An agent's outcome thus depends directly on another agent's behavior.

Agents provide each other with the valued resources through some form of exchange and exchange is recurring over time. Resources can range from tangible goods to intangible goods such as status or approval. Most variants of exchange theory assume homogenous utility within the constraints of the network structure allowing for heterogeneity in the values of edges or in agents' characteristics.

2. Basic Concepts

each controlling resources which others value and seek to obtain! Agents provide each other with the valued resources through some form of exchange and exchange is recurring over time. Resources can range from tangible goods to intangible goods such as status or approval. Most variants of exchange theory assume homogenous utility within the constraints of the network structure allowing for heterogeneity in the values of edges or in agents' characteristics.

allowing for heterogeneity in the values of edges or in agents' characteristics.

2.1 Forms of Exchange

Exchange in networks can either take the form of

-XVW DV LQ VRFLDO QHWZRUN be David and the outcome of exchange solely. Rib term V usually assume dyadic exchange relations to be QHWZRUN VWUXFWXUH QRW RQO embedded in a broader exchange network. Exchange also the experimental settings became more diverse and QHWZRUNV DUH GH QHG DV D VR V K RV WLVF DVHHDG W RVWKH JHDP SDQJH Q W W Each agent is connected to at least one other agent. H[FKDQJH ZKR FDQ H[FKDQJH ZLWK WKH QHWZRUN D SUHFRQGLWLRQ HIRWKUH H QJGGJLQJGXO QM FFKDQJ FKH RRV The dynamics of exchange depend crucially on DQG RWKHU DVSHFWV RI WKH H[FK whether network connections DUH SRVLWLYH & KH V K L J D H W L 5 L F H D 1 D N D J D Z D S GLVWLQFWLRQ SURSRVHG E\ (PHUVRQ QRGH D QHWZRUN ZLWK UHVVWULFWHG is also used in network analysis. positively connected

RU LQFOXVLRQDU\ QHWZRUNV H[FKDQJH LQ RQH UHODWLRQ LV independent from exchange in another relation. This means that agents are allowed to exchange with more than one of their connections per round. negatively FRQQHFWHG RU H[FOXVLRQDU\ QHWZRUNV H[FKDQJH LQ one relation is contingent on non-exchange in another UHODWLRQ WKDW LV DJHQWV FDQ RQO\ H[FKDQJH ZLWK RQH RI WKH FRQQHFWLRQV SHU URXQG & RRN (PHUVRQ 0ROP :KLOH PRVW WKHRUHWLFDO 2.3 Critical Development KLV HOG SURYLGH RXWFRPH SUHGLFWLRQV IRU QHJDWLYHO\ FRQQHFWHG QHWZRUNV only few models are designed to predict outcomes in HRUJH +RPDQV ZDV DPRQJ WK positively connected networks as well. Following the WKHRULVWV ZKR IRFXVHG RQ LQ WKHRUHWLFDO IRFXV PRVW H[SFKBHQWV D LVGXOLGXDOH DOK D W R negatively connected exchange networks. as a function of payoffs obtained from other humans or

2.2 Experimental Setting

7KH IRUPDOL]DWLRQ RI VRFLDO behavior is a central concern for David and Rib allows testing its propositions in controlled settings such as laboratory experiments. The experimental design chain interest was social behavior that emerges over time as laboratory experiments. The experimental design from this social process of mutual reinforcement. He GHYHORSHG E\ & RRN (PHUVRQ framed this field in terms of rewards and punishment and EHFDPH WKH VWDQGDUG distinguished the conditions of exchange behavior. Homan's experiments on negotiated exchanges in negatively connected exchange networks. At the beginning of the VRFLDO JURXS ZDV FULWLFL]HG DV H[SHULPHQW DJHQWV DUH UDQGLRQ\ DVVLEHQFH XWR RI SRVLWLYH R L Q the network which they keep throughout the experiment. W R H[SODLQ VRFLDO EHKDYLRU & F During the experiment agents may negotiate on how to Q VWHDG %ODX SURSRVHG D PRUH GLYLGH D Q[HG DPRXQW RI UHVVWULFWLRQ ESJKDYLWLV H, QGWRIHHXW LOLV DQG FRXQWHU RIIHUV XQWLO HDWKHUV DVQR DEJU HIRUPZHQVNG ROR RN MLQ P B OLPLW LV UHDFKHG ,I WZR DJHQWV XUIDLQ ZRUQVUHN RESVRK HDG HQRWLV gain nothing. The information available to the agents agent assumed by Homan's reinforcement principle. varies across studies. They may or may not be informed. Bidu focused mainly on reciprocal exchange of extrinsic DERXW WKH SURW RI RWKHUV FKH HIRUP IRQV WKH QHWZRUNV \ FW HMKW SRVLWLRQ LQ WKH QHWZRUN & RRN HW DQ LV ZRUNRQH QHDPH QHWUXF XVH D UHVVWULFWHG LQIRUPDWLRQ DQG VHWVWLLQJ LQRFLDGH US UVR HQVPHV WKH HIIHFWV RI DJHQWV HTXLRWH S UH I E H O A S P W E R D E H B J Theory Q J RXWFRPHV LQ D QYH QRGH QHWZRUN V H H) Z K L F K F R P D I Q Q H V W K H V X E V H T X H Q W H [S H U L P H Q W V U H O D B I W H m o v e d t h e f o c u s f r o m t h e i n d i v i d u a l a g e n t F W L D Q G L Q V W H D G X V H D I X O O L Q I R R J a d y a d i c e x c h a n g e r e l a t i o n t o l a r g e r n e t w o r k s a n d D J H D U H L Q I R U P H G D E R X W W K H F R Q W I D H Q e m p h a s i s t o t h e r e l a t i o n s b e t w e e n a g e n t s a n d H V K D S H R I W K H Q H W Z R U N D Q G W h e s t r u c t u r e S R V L W K R Q H L F K D W K J H Q H W Z R U N

Once the focus shifted away from explaining exchange network as a set of directly connected exchange

ZKR KDYH EHHQ ; UVW W R and H is the P his Q W D Q of forms R P is at U as well as
SUHGLFWLRQV RI D VHW RI GLIIE Exchange-Resistance Theory ZKL
they added their own Exchange-Resistance Theory +RZHYHU WKH PRGHO ZDV V XEMHFV
WKHRU\ LV FORVH WR 1(7 LQ L W U L D W L F X R S W E L R O D U N E R Y W N L Q F D O G H U
the concept of resistance. An agent is considered less DQG ZDV QRW IXUWKHU GHYH
likely to resist the terms of an agreement if she faces a , Q D FRPSDUDWLYH VWXG\ :LOO
high probability to be excluded from exchange. When WHVW WHQ VRFLDO H[FKDQJH
ERWK DJHQWV DUH HTXDOO\ U H d e v e l o p e d u n t i l t h e y i d e n t i f y t h e m s e l v e s
of equi-resistance is reached. They identify Exchange- /RYDJOLD HW DO DV WKH EHV
Resistance Theory as the best model explaining the Equi-Dependence Theory & RRN <DPDJLVKL
observed outcomes. ranks ninth? The authors also call for the extension of

/RYDJOLD 6NYRUHW] :LOOHU HYDOXDWH WKH SUHGLFWLRQV RI WKHLU ([FKDQJH
IXUWKHU E T O R N I O N S the concept of D SDSHU RQ ODUJH VFDOH H[FKDQJH
UHVLVWDQFH ZLWK WKH GHJUHH \$ V R I H W K H (P D Q X M O D R Q W K H U E R Q Z F K L S
stemming from network analysis. The degree of an agent's Domain Analysis (DA) as a tool to cut large networks into
is the number of direct relations this agent has to other P D O O H U F D O P D O s e n q u i s h e s h o w e v e r
agents in the network. The resulting GPI-RD model domains (subnetworks which function inside and
assumes that a higher relative degree of an agent leads to W V L G H W K H O D U J H Q H W Z R U N L Q
D KLJKHU RXWFRPH) XUWKHU (subnetworks function in the large network and outside
to bias the effect of inclusion in an exchange network of it in different ways) and breaks (connections which are
a structurally advantaged agent may gain more from GHYHU XVHG FRQFHSWV ZKLFK
VLQJOH H[FKDQJH EXW PD\ H[FKDQJH E X P E R I M E N T A L D A T A R A N D S I M U L A T I O N S U P P O R T
ZLWK D ORZHU UHODWLYH GHJUHH S U R S R Q E W L R Q K R I U G R H P [S H F W R E P S H R U
degree agents to be tougher in bargaining. The authors exchange networks. They show that power decreases as
WHVW WKH VDPH WKHRULHV D network density increases. Density is a measure for the
and add the Exchange-Resistance model and the newly Q X P E H U R I F R Q Q H F W L R Q V L Q D Q H W
developed GPI-RD PRGHO DV Z P I O P D G H D S o l f d w l r q w i t h network analysts. Although DA only seems to
ZKLFK LV EDVLFDOO\ WKH VDPH W o r d i n n e t w o r k s w i t h l o w d e n s i t y E x e r t l e s s w i t h
GHJUHH 7KH\ G P R G m o d e l s d i f f e r w i t h t h e most the scope of social exchange theories.
exact predictions. The theories presented so far share the assumption

Another model to be mentioned in this context is that all exchanges in a network happen simultaneously.
the Power Model RI <DPDJXFKL ZKLQK ER DSSOLFDWLRQV H Dependence Theory
to positively and negatively connected networks GHYHORSHG E\ %XVNHQV DQG 9DQ 'H
<DPDJXFKL DVVXPHV SRZHU WR VE K H W K H T X H Q W O W O R Q D W X D U H Q W K U H
network position (structural causes) and the exchange ASZR DJHQWV KDYH GHFLGHG WR H[
with her network partners (relational causes). The power structure for the remaining agents in the network
RI DQ DJHQW LV D I I H F W H G E\ W K K D Q W I H O L W Q O D M L P L J L Q Q E M X D Q L P U
of her partners. As long as a network has not reached power. The anticipation of a potential loss of power
HTXLOLEULXP VWDJH DJHQWV Z K O O G H F N X D O W S H U R Q D W L S O L S D U W Q H
IRU H[FKDQJH OHDGLQJ WR D S U L O G F L W H V G I L Q W K K I K S R Q H W Z R I U N
those partners facing a rising demand for their resources. GHYHORS D PHDVXUH WR SUHG
8VLQJ WKH H[SHULPHQWDO GDWD D e v e l o p e d b y M i k R e l a t i o n W e r y p o s s i b l e D e p e n d e n c e
; Q G V H [S H U L P H Q W D O V X S S R U U n d e r c o n s i d e r a t i o n o f a c h a n g i n g s p o r t i n g c a p a c i t y f o r m u l t i p l e

6NYRUHW] DQG :LOOHU HYDOXDWH WKH SUHGLFWLRQV RI WKHLU ([FKDQJH
%LHQHQVWRFN %RQDFLFK (TXL 'HSHQGQHFH 7KHURU\ &RRN <DPDJLVKL
7HVWHG WKHRULHV 3RZHU 'HSHQGQHFH 7KHURU\ &RRN <DPDJLVKL WKH *3
4XDQWL;HG &RUH %LHQHQVWRFN %RQDFLFK 6NYRUHW])DUDUR ([SH
RU\ 6NYRUHW])DUDUR 3RZHU ORGHO <DPDJXFKL ,GHQWLW\ 7KHURU\
*DXWVFKL DQG WKH ([SHFWHG 9DOXH 5HVLVWDQFH ORGHO :LOOHU (PDQX
7KH DSSOLFDWLRQ RI H[FKDQJH WKHRULHV LV RIWHQ OLPLWHG E\ WKH VL]H RI D
DSSOLHG WR VPDOO QHWZRUNV LQ D ODE H[SHULPHQW EXW QRW WR ODUJHU QH
FRPSOH[LW\ RU WKH OLPLWV SURJUDPV IRU DSSOLFDWLRQ KDYH :LOOHU HW DO

The authors refer to the data generated by Willer and (2001) consider variations in the relative value of (PDQXHOVRQ WR DVVHVW WKH SVRIGW FMDYH SRZHUWKHWZGLPHQ variations of the Sequential Power-Dependence Theory LOOPRUH VHH DERYH 7KH\ I in comparison to three other theories. Both models A's dependence on B increases the more value A can outperform the predictions of Equi-Dependence Theory REWDLQ IURP % UHODWLYH WR WK and Expected Value Theory + R ZHY GPI-R Model alternative exchange relations. Access to more valuable still performs better and thus the conclusion of Willer and alternatives decreases A's dependence and increases (PDQXHOVRQ LV VXSSRUWHV \$ SRZHU RYHU % & RQVHTXHQWO B is expected to increase with the availability of more

3.3 The Form of Exchange and Power

Following the lead of the seminal experiment of Cook that in negatively connected networks A's power over B HW DO WKH YDVW PDMRUBLYW INCREASES WITH THE VALUE OF A'S DEDERATION to experimental studies discussed so far assumes implicitly EXW WKDW D KLJKHU YDOXH HYH or explicitly that exchanges are negotiated + R ZHY HIGHER AVAILABILITY. Building on these results and results limitation to one form of exchange and the neglect of REWDLQH G LQ RWKHU H[SHULPHQW other forms may have led to assumptions and principles the Theory of Reciprocity This theory will be described valid only for negotiated exchange and not for exchange in the following chapter since it marks the beginning of in general since "the form of exchange affects the causal VWURQJHU VRFLDO SV\FKRORJLF mechanisms underlying power use and the relationship research agenda.

EHWZHHQ QHWZRUN VWUXFWXUH D EARLY SOCIAL EXCHANGE REOPS have been mainly S 7R RYHUFRPH WKLW OLPLW DETERMINED WITH THE STRUCTURAL PROPERTIES OF A NETWORK VWDUWHG D VHULHV RI H[SHULPHQWV LWQ FWHV IOTXWHQ FHW IWR WWH G how the form of exchange DIIHFWV SRZHU THE HISTORY OF SOCIAL EXCHANGE RESEARCHERS focus not and commitment as well as the perception of fairness RQO\ RQ VLPLODU WRSLFV DV VRFL H[FKDQJH UHODWLRQV % HVLGHV VW KHV URXU RU H[FKDQJH SRZHU RYHU EXW IXUWKHU GLVWLQJXLVKHV to EDUWZE HETWORKS PAID RELATIONS. AS SOCIAL EXCHANGE WKDW LV SRZHU EDVHG RQ WKH IBSDFLHW RYH SVQ WKKH DFRQQRZ WU RI UHZDUG WKDW LV GHSHQG HIGHER AND REVEALS OF SOCIAL EXCHANGE RESEARCH Molm's Theory of Coercion in Exchange builds gradually towards the individual agent in the network.

on Emerson's Power-Dependence Coercion is not induced by the structure of a network but has to be used as Social-psychological Approaches VWUDWHJLFD OO\ E\ WKH DJHQWV OROP OROP 3HWHUVRQ DQG 7DNDKDVKL ;QG H[SHULPHQWV D XWYQLBHWKH FKHQWXU\ RQ average power use is lower in reciprocal exchanges than FWRUV DQG WKHLU LQ AXHQFH RQ LQ QHJRWLDWHG H[FKDQJH 3R NETWORKS HAVE ATTRACTED MORE ATTENTION UNCONSCIOUSLY exchanging with more dependent agents in negotiated SXUHO\ QHWZRUN DQDO\WLFDO DS H[FKDQJH ZKLOH WKH\ JDLQ PR explain behavior in exchange networks and outcomes of dependent agents in reciprocal exchange. In negotiated exchange on the basis of preferences and emotions. In H[FKDQJH SRZHU IXO DJHQWV THIS SECTION WE WILL PRESENT THE RESEARCH PROGRAM WHICH strategy of exchanging continuously with a partner who led to the development of the theory of Reciprocity is more dependent rather than choosing a more valuable HOO DV RWKHU VRFLDO SV\FKRORJ but riskier strategy of exchanging primarily with the less RFLDO SV\FKRORJLFDO DSSURDFK dependent partner. relationships to exceed the exchange of material goods

,Q WKH V OROP DQG FROHWHZHXQ VU DWWWRQ DV SURR ;W PD[LPL develop a more general theory of power in exchange perceived as social agents who can feel emotions (e.g. QHWZRUNV ,Q D ;UVW VWHS OROZFO HJHWHUVRQ OROZFO HJHWHUVRQ OROZFO HJHWHUVRQ

*3, 5 PRGHO /RYDJOLD HW DO (TXL 'HSHQGHQFH 7KH RU\ & RRN <DPDJLVK OROP PDSV WKH GHYHORSHPHQW RI KHU 7KH RU\ RI & RHUFLRQ LQ ([FKDQJH DQ WKHRU\ LQ D WKHRUHWLFDO UHVHDUFK SURJUDP XVLQJ ODERUDWRU\ H[SHULPHQW chapter 11 on the results of the experiments.

FRPPLW WR D UHODWLRQVKLS ZKHJWKDZJOWKH 7KHVKDQJRRQV SHUFHL
OROP DQG H[SHULHQRHHFRKHQJLRQVZLWUHLQHYDQW ORO
D UHODWLRQ RU D QHWZRUN H J /DZOHUW <RRQ HPSLULFDOO\ V
,Q FRQVHTXHQFH H[FKDQJHV PDDOLHGHUHQGHQWFRWVNGO responsible
HFRQRPLF UDWLRQDOLW\ EXW DOWHEDifferenPevVil PaqnessR perDptions HefwL R F
RI D UHODWLRQ WKHUHE\ FKDQJHEDQWKH WLSW HUSO HWDHJWRQ WRHGW
dynamics observed in social exchange networks. LQ GLUHFV FRQIURQWDWLRQ ZLWK

7KH UROH RI HPRWLRQV FRPPLWVFDQWHDQV FRKSDUHQ WR XQL
in exchange situations have been studied for more than a decade.
decade largely in parallel by two research groups headed by Emotions emerge not only with respect to the
E\ /LQGD OROP DQG E\ (GZDUG EHXOMURUQO\WUKHFRQWUO DJHQWV
attempts of connecting and reconciling their theories as such. Reciprocal exchange can provide symbolic
DQG H[SHULPHQWDO ¿QGLQJV beyond the instrumental value of exchange. Symbolic
/DZOHU 7K\H <RRQ value is created through constant reciprocal behavior of
:KLWKDP :H ZLOO ¿UVW by other agents which triggers affective reactions for exchange
two research groups separately and then discuss linkage (expressive value) and reduces uncertainty with
EHWZHHQ WKHLU UHVHDUFK SUPEDED that relation. The authors show experimentally Z
DGGLWLRQDO ZRUN RQ IDLUQH what agents primarily consider the expected instrumental

5HFLSURFDO ([FKDQJH DQG 6Dosing Between Two Exchange Relations of different
instrumental and symbolic value. A potential explanation

Molm (2010) develops the Theory of Reciprocity as part is that the instrumental value of an exchange relation is
RI DQ H[WHQG HG UHVHDUFK SURRULYLR X,Q WDJ,KW W UVRPH SV KHR EPIJLQ Q I
al. (2000) compare how trust and commitment develop value of a relation becomes salient only after repeated
in negotiated and reciprocal exchange networks. They [FKDQJH OROP 6FKDHIHU & ROOH
¿QG WKDW WUXVW DQG DIIHFWLYH FRPPLWVURHJQQW WIKDW LHM VFDWLVK
emotions towards the exchange relation or group (Molm 2010) suggests that the Theory of Reciprocity
more likely to develop in reciprocal exchange relations W KUHH FRUH HOHPHQWV WKH ULVN
than in negotiated exchanges. The emergence of emotions D OXH DQG VDOLHQFH RI FRQÀLFW
in reciprocal exchange networks depends on how affect the development of integrative bonds of trust in an
exchange partners behave. The greater the behavioral fidelity [FKDQJH UHODWLRQ DIIHFWLYH FR
FRPPLWPHQW WKDW LV UHFXXOHUJ H[FKDQJHV ZLWKLQ WKH
VDPH UHODWLRQ RI WKH SDUWQHUV DQG WKH ORZHU WKH LQHTXDOR
RI SUR¿WV WKH KLJKHU WKH 42 RRelational Bonding and Jointness of Action HFWLYH
commitment. These effects are not observed in negotiated
H[FKDQJHV &RQ¿UPLQJ SUHYLRQV HSHQGHQW OROPEXW DODUOOHO
VHH VHFWRQ WKH H[SHULPHQW WRGHPRQGZDWGW HWDROFH DQG
PRUH WKDW LQHTXDOLW\ RI RXWVURPHQV and Judgments and the Interaction With D H

,Q DQRWKHU VHULHV RI developed Relationship Cohesion Theory
al. (2003) show that agents in negotiated exchanges are Social Exchange, Network-to-Group Formation
hold their exchange partner more responsible for the theory and the Choice Process Theory of Commitment
outcomes of exchange even if the outcome is the same /DZOHU DQG <RRQ (see Beatty et al. 2003)
DV LQ WKH UHFLSURFDO H[FKDQJH Relationship Cohesion Theory, D WIGERML RQ YH
they are more likely to perceive their partner as being agd tested in a series of experimental studies (Lawler
XQWUXVWZRUK\ XQKHOSIXO FRPPLWVURHJQQW 7D The authors assume Q
UHFLSURFDO H[FKDQJHV WKH WEDW RIKH HFLSTURHFM\ RIDVHFKDQJ
ZKLOH WKH YDOXH RI WKH JLYHQ relationship and don't return to a relationship HTOE H
,Q QHJRWLDWHG H[FKDQJHV W completed many processes are considered responsible

,QLWLDOO\ WKHLU IRFXV LV RQ WKH G\DGLF UHODWLRQ HPEHGGHG LQ D PLQLPD
VPDOO H[FKDQJH QHWZRUN H J NLWH RUEUDQFK DQG ODWHU WKH\ H[WHQG WKH

for the development of commitment in dyadic exchange relations. If exchange is repeated successfully between the predictability of exchange with this partner increases. Agents perceive these relations as more cohesive and develop greater commitment to this exchange relation which results in a more favorable treatment of the exchange partner and compare them experimentally.

(1) Agents stick to an exchange relation even if better alternatives exist (staying behavior). Agents who participate in exchange can be attributed to the relevant exchange partner. The results support the Affect Theory by showing that the perception of relational cohesion stimulates all three forms of commitment. The reduction process are incorporated as complementary processes operating independently.

+RZHYHU /DZOHU DQG <RRQ. Agents who participate in exchange since tasks are highly differences in the level of relational cohesion and interdependent and the degree of shared responsibility is high. In a negotiated exchange, the high shared responsibility for an exchange task is also relatively high and triggers stronger positive feelings and thus higher relational cohesion. These relations are also more likely to persist when agents are provided with a second and better exchange alternative after having exchanged with this partner. The perception of shared responsibility is lower in this staying behavior as a sign of commitment to the exchange relation. Agents are unlikely to develop a strong sense of shared identity in the network.

They assume that relational cohesion and behavioral commitment in individual dyads are weakened by framing the whole exchange network as a group with a common identity. In this case agents are expected to keep exchanges balanced across all potential exchange partners and Molm start to converge. Both study emotions evidence for a weakening of cohesion and commitment.

7K\H /DZOHU <RRQ. Endogenous processes underlying relational cohesion and jointness of task. Depending on which concept is used Theory (uncertainty reduction and emotional processes) may induce agents to develop a sense of cohesion only on the level of the dyad but also on the level of the group or network in a productive exchange setting.

How negotiations affect the perception of UHODWLRQV 7K\H 7KH DXWKR SURFHGXUDO DQG GLVWULEXWLRQV... (2008) studies on status characteristics... The perception of procedural fairness... (2008) conclude that individuals perceive different distributions... of a distribution. Critically echoing the title of Molm et al.

WKH\ FODLP WKDW SURFHGXUDO DQG GLVWULEXWLRQV... (2008) conclude that individuals perceive different distributions... of a distribution. Critically echoing the title of Molm et al.

Hegtvedt's work has only recently been... (2008) conclude that individuals perceive different distributions... of a distribution. Critically echoing the title of Molm et al.

4.6 Status and Value

While Molm et al. (2001) treat value as a further dimension... Status Value Theory... predicts that positive status characteristics are accompanied by...

the structure of the network to the individual behavior of agents and the research interests of social exchange theory and social network analysis are less aligned.

5. Game-theoretic Approaches

social exchange networks. Bienenstock and Bonaccini is studied in the social sciences. Different disciplines have different theoretical orientations and different problems and social dilemmas comparable to games such as the exchange of resources. The expected value theory can be observed.

5.1 The Pioneers

exchange networks stress how structure affects power and which the payoffs in one period affect the probability of an exchange. The central agent has an initial advantage in exchange networks which diminishes after some rounds when reached. The expected value of an exchange for an agent A depends on the number of resources A expects probability of an exchange depends on the value of the exchange relations in the network.

WKH SUR, W REWDLQHG LQ DOWHUQDQW DO, Q QHWZRUNV ZLWK DJH QHWV VDWLV, group rationality and is predicted to be stable. In networks ZLWKRXW D FRUH DJH QHWV DUH H[S reaching an agreement and these networks are expected to be stable. In a lab experiment Bienenstock and Bonaccini (1990) found that agents in social exchange networks. Bienenstock and Bonaccini (1990) found that agents in social exchange networks. Different disciplines have different theoretical orientations and different problems and social dilemmas comparable to games such as the exchange of resources. The expected value theory can be observed. The expected value of an exchange for an agent A depends on the number of resources A expects probability of an exchange depends on the value of the exchange relations in the network. The Network Control Bargaining Model (NCB) to predict outcomes in exchange networks. The model builds on coalition and group rationality. Individual rationality implies that an agent will not accept an exchange providing her with fewer resources than she could earn by not exchanging. Coalition rationality implies that two agents will not exchange if they could obtain from exchanging with other partners in the network which network control depends crucially on the order of a sequence of exchanges and the likelihood

indirect reciprocity only occurs when direct reciprocity is ruled out.

5.5 Coalitions in Social Exchange Networks

A second important application of game theoretical concepts in a network context is coalition formation. Power agents are able to reverse the distribution of power in a network through collective action. Emerson (1843) noted that the advantage can be reduced if these relations are condensed through coalition.”

The general experimental setup is such that one agent has a pool of resources in a negatively connected network. Agents within a coalition send a collective action they avoid the usual bidding war. For a coalition to rule out being excluded from exchange. But there is a social dilemma inherent in the process of coalition formation. The authors note that the experimental results show that the effect on outcomes is negatively connected. Substantially when coalitions are formed, the distribution of resources is preserved the social dilemma.

The process of coalition formation can also affect power distribution in exchange networks. The Power-Dependence Theory predicts that the formation of coalitions of the weak against the strong is highest when power is severely imbalanced and lowest when power is balanced. Simpson and Macy (2001) found that in smaller networks than in larger networks. While coalitions in

surprising result may be that each agent expects the other to be the best strategy.

7 KH VRFLDO GLOHPPD RI WKH E Z HDN SRZHU DJHQWV FDQ DOVR WDM Dilemma. Cooperation stands for offering exactly half of the resources. If one agent offers less than half, the other agent will not cooperate. If one agent offers more than half, the other agent will not cooperate. The authors note that the experimental results show that the effect on outcomes is negatively connected. Substantially when coalitions are formed, the distribution of resources is preserved the social dilemma.

collective goods embedded in certain network structures. Collectively by forming a coalition. As a result everyone is better off compared to acting individually. The authors note that the experimental results show that the effect on outcomes is negatively connected. Substantially when coalitions are formed, the distribution of resources is preserved the social dilemma.

The process of coalition formation can also affect power distribution in exchange networks. The Power-Dependence Theory predicts that the formation of coalitions of the weak against the strong is highest when power is severely imbalanced and lowest when power is balanced. Simpson and Macy (2001) found that in smaller networks than in larger networks. While coalitions in

12 Note that the preferences communicated to the agents are not the real preferences elicited from the other group members but preferences generated by the experimenter.

LQ VPDOO QHWZRUNV 6LPSVRQ DQG ODF\ S
FRQFOXGH WKDW ³>H@[FKDQJH6CdnWZrRmWks HRULHV PXVW PRYH
away from the traditional conception of social structures
DV ¿[HG DQG XQ\LHOGLQJ ' ,Q WKLV DUWLFQ ZH VXPPDUL]H

5.6 New Perspective and Outlook

The fact that the structure of a network affects its research interests. The structure of a network and its implications for exchange theories was of local interest. The assumption that network structures are static has been challenged by research that shows the endogenous formation of networks is attracting more and more interest. Because the endogenous formation of networks is attracting more and more interest, the complexity of models of social exchange is increasing substantially. Every change in the structure of the network is challenging and problematic. One way forward is to use computational simulations to tackle the complexity of networks.

Several strands of research have evolved in parallel across worlds without taking such notice of examination of large structures.

Not only the endogenous emergence of a part of the history of social exchange research would suggest behavior leading to the formation of certain networks have helped the research programs mature until their Van Dolder and Buskens (2014) examine experimental cumulative knowledge. Recent contributions integrating different research traditions show that the combination of the cumulative work on social exchange and Buskens (2010) study whether and how agents

solve a coordination problem in a network by changing network structures of little interest to scholars in network analysis. But the complexity of larger networks mandates substantial departures from the standard theories and methods. Models become analytically intractable and numerical approaches are needed to derive testable hypotheses. Agents are limited in their capacity to reconstruct the theoretical network structures in the laboratory. Social media and formation in particular are expected to be published potentially for studying and testing these new research

has much to offer to network analysis with respect to the

,Q HFRQRPLFV WKH UHVHDFK RQ QHWZRUN IRUPDWLRQ KDV EHHQ H[SDQGGLQJ F
&DOODQGHU DQG 3ORWW &DUULOR DQG *DGXK)DON DQG .RVIHQ
.LUFKVVHLJHU ODQWRYDQL ODXOHRQ DQG 9DQQHWHOERVFK)RU DQ H

FLDO 3RZHU 3UHGLFWLRQV IRU 6HOHFWHG ([FKDQJH
1HWZRUNV 6RFLDO 1HWZRUNV ZOHU (- 7K\H 6 5 <RRQ -
)ULHGNLQ 1 (\$Q ([SHFWHG Exchange and Reciprocal Order. American
6RFLDO ([FKDQJH 2XWFRPHV \$GVRFLDO RORJLQ DORXSHYLHZ
3URFHVVHV /DZOHU (- <RRQ - 3RZHU
)ULHGNLQ 1 (7KH ,QFLGHQ Fede of Commitment Behavior in Negotiated
1HWZRUNV 6RFLDO 3V\FKRORJ\ (FKDQJH) \$PHULFDQ 6RFLRORJL

*RHUHH - . 5LHGO \$ 8OH /DZOHU (Q-6HDURRQI- &RPPL
Stars: Network Formation Among Heteroge Exchange Relations: Test of a Theory of Rela
QHRXV \$JHQWV *DPHV DQG (FRORJLQDORJLQ \$PHULFDQ

+DXN (1DJHO 5 &KRL/DZOHU RORJLQ - 1HWZR
0XOWLSOH 7ZR 3HUVRQ 3ULVRQ and Invention of Exchange Relations. American
*DPHV \$Q ([SHULPHQWDO 6WXG 6RFLRORJLQ DORXSHYLHZ
ÀLFW 5HVROXWLRQ /HYHQWQDO * 6 .DUX]D -)U\
+HJWYHGW . \$ 0DUNRYVN\ %)DLUQHWWLFH 7KH Q\ RI \$OORFDV
,QMXVWLFH ,Q . 6 &RRN * \$ *)LQHNXOD6 (G -XVWLFH DQG 6
+RXVH (GV 6RFLRORJLFDQ 3H\US\$HFWLQW DORXQ 7KHRUHWLF
6RFLDO 3V\FKRORJ\ %RVWRQ \$OORQ 3DORQ RORJLQ DORXSHYLHZ
3XEOLVKHUV

.LUFKVWHLJHU * 0DQWRYDQL /DQGD \$XQHRQ7\ \$HU 9DQ5 7KH
QWHOERVFK 9 /LPLWHGR)DURIL 3URFHQWDO -XVWLFH 1
in Network Formation. Report. Université 3UHVV
FDWKROLTXH GH /RXYDLQ &RORJLQ DORXSHYLHZ] - :LOO
Research and Econometrics. % 1HJRWLDWHG ([FKDQJH

.RVIHOG 0 (FRQRPLF 1HWZRUNV WRFLDORJLQ DORXSHYLHZ
WRU\ \$ 6XUYH\ 5HYLHZ RI 0DQWRYVN\ (FRQRPLFV 'HYHORSLQJ DQ
ZRUN 6LPXODWRU 6RFLRORJLFDQ

.XZDEDUD . &RKHVLRQ &RRSHUDWLRQ DQG WKH
Value of Doing Things Together: How Econom 0DUNRYVN\ % 6NYRUHW] - :LOO
ic Exchange Creates Relational Bonds. Ameri - 7KH 6HHGV RI :HDN 3RZ
FDQ 6RFLRORJLFDQ 5HYLHZ sion of Network Exchange Theory. American
/DZOHU (- \$IIHFWLYH \$WWD 6RFLRORJLQ DORXSHYLHZ
*URXS \$ &KRLFH 3URFHVVHV DORXSHYLHZ \$PHULFDQ 3DWR
6RFLRORJLFDQ 5HYLHZ Relations in Exchange Networks. American
/DZOHU (- \$IIHFWLYH \$WWD 6RFLRORJLQ DORXSHYLHZ
*URXS 7KH 5ROH RI 5DWLRQDORJLQ DORXSHYLHZ 6LPSVRQ
,Q - 6NYRUHW] - 6]PDWND - %HUJHU 3RZHU LQ ([FKDQJH 1HW
6WDWXV 1HWZRUNV DQG 6WUXWV WRFLDORJLQ DORXSHYLHZ 7KHRU\ \$PHULFDQ
YHORSPHQW LQ *URXS 3URFHVVHV 5HYLHZ
6WDQIRUG 6WDQIRUG 8QLYHUV\ 3UHVV &RHUFLYH 3RZHU LQ
/DZOHU (- \$Q \$IIHF 7KHRUHWLFH DORXSHYLHZ Cambridge University
FKDQJH \$PHULFDQ -RXUQDO RI 3URFHVVHV RORJLQ

OROP / ' 7KHRULHV RI 6RFLDQ
/DZOHU (- 7K\H 6 5 <RRQ - ([FKDQJH RORJLQ DORXSHYLHZ
DQG *URXS &RKHVLRQ LQ 3URGXFWLYH (DORXSHYLHZ RI 6RFLDO 7K
\$PHULFDQ -RXUQDO RI 6RFLRORJLQ \$*(3XEOLFDWLRQV
657. OROP / ' D 3RZHU 7UXVW DQ
/DZOHU (- 7K\H 6 5 <RRQ - Comparison of Negotiated and Reciprocal
ment in Structurally Enabled and Induced Ex ([FKDQJH ,Q 6 5 7K\H - 6NYR
FKDQJH 5HODWLRQV 6RFLDO 3V\FKRORJLQ DORXSHYLHZ 3URFHVVHV

<DPDJLVKL 7 &RRN . 6 *HQHUDOL]HG
([FKDQJH DQG 6RFLDO 'LOHPPDV 6RFLDO 3V\FKRO
RJ\ 4XDUWHUO\
<DPDJXFKL . 3RZHU LQ 1HWZRUV RI 6XEVLWXW
able and Complementary Exchange Relations:
\$ 5DWLRQDO &KRLFH 0RGHO DQG DQ \$QDO\VLV RI
3RZHU &HQWUDOL]DWLRQ \$PHULFDQ 6RFLRORJLFDO
5HYLHZ
<RRQ - 7K\H 6 5 /DZOHU (- ([FKDQJH
and Cohesion in Dyads and Triads: A Test of
6LPPHO V +\SRWKHVLV 6RFLDO 6FLHQFH 5HVHDFK
=HOGLWFK 0 /DERUDWRU\ ([SHULPHQWV LQ 6RFLRO
RJ\ ,Q :HEVWHU 0 6HOO - /DERUDWRU\ ([
SHULPHQWV LQ WKH 6RFLDO 6FLHQFHV (G /RQGRQ
(OVHYLHU