



UNIVERSITÀ  
DEGLI STUDI  
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Università degli Studi di Padova

Dipartimento di Psicologia Applicata  
Facoltà di Psicologia

Scuola di Dottorato di Ricerca in Scienze Psicologiche  
Indirizzo in Psicologia Sociale e della Personalità  
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## RC-ECOMAP: A VALID AND RELIABLE TOOL TO ASSESS INTIMATE RELATIONSHIPS

**Direttore della Scuola:** Ch.mo Prof. Clara Casco

**Coordinatore di indirizzo:** Ch.mo Prof. Sergio Masin

**Supervisore:** Ch.mo Prof. Mario Cusinato

**Dottorando:** Walter Colesso

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## DEDICATION

I dedicate this thesis to the most important people in my life as a researcher: To Mario Cusinato and Luciano L'Abate. Thank you for what you gave me: knowledge and passion.

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## ABSTRACT

In the assessment of intimate relationship, researchers have to conciliate two possible and hazy levels of investigation: Idiographic and nomothetic approach. The Ecomap is suggested as an instrument that could link clinical practice and research, qualitative and quantitative method, idiographic and nomothetic approach. Although the Ecomap is widely utilized, due in part to its ease of administration, it has not been validated in the literature as a reliable and valid tool in spite of efforts to carry out it.

This study aims to overcome the methodological limits of the traditional Ecomap, proposing a new reliable and valid Ecomap to assess intimate relationships, for practice and research. By reviewing the literature on the Ecomap has been examined the methodological limits of the tool. In order to overcome the limits, it was created a new Ecomap (RC-Ecomap) to assess intimate relationships of individuals (I RC-Ecomap), couples (C RC-Ecomap), and families (F RC-Ecomap). The new instrument was based on the Relational Competence Theory of L 'Abate (1995, 2000, 2005). Examples of Individual, Couple, and Family RC-Ecomaps are presented following an idiographic approach. Then a series of nomothetic research studies are presented in order to verify psychometric properties, reliability, internal, and concurrent validity (Italian and Spanish versions), predictive, and differential validity (parents of psychotic patients, alcoholics attending a rehabilitative program, high and low scores at the Narcissism Scale, with Italian participants) of RC-Ecomap.

The results suggest that RC-Ecomap is a valid and reliable tool to assess intimate relationship, emphasizing its bridge function between in clinical practice and research. But more research is needed with more extensive and balanced groups of non-clinical participants, especially in the Spanish context, and with other clinical groups.

A RC-Ecomap training program is proposed.

## RIASSUNTO

Nell'assessment delle relazioni significative i ricercatori si sono sempre trovati di fronte al problema di dover conciliare i due possibili livelli di analisi che possono essere ricondotti agli approcci di tipo idiografico e nomotetico. La letteratura indica l'Ecomappa quale strumento che riesce a conciliare pratica clinica e ricerca, aspetto qualitativo e quantitativo, approccio idiografico e nomotetico. Sebbene l'Ecomappa sia uno strumento largamente utilizzato per la sua facilità di impiego, essa non è stata ancora dimostrata l'attendibilità e validità dello strumento, nonostante le ricerche condotte in questa direzione.

Lo studio presentato ha come l'obiettivo di superare i limiti metodologici dell'Ecomappa tradizionale, proponendo una nuova eco mappa per l'assessment delle relazioni significative, da utilizzare sia nella pratica clinica sia nella ricerca.

La rassegna della letteratura sull'Ecomappa ha permesso di evidenziare i limiti metodologici dello strumento tradizionale, punto di partenza per la costruzione di una nuova proposta: l'Ecomappa di Competenza Relazionale (RC-Ecomap) per l'assessment delle relazioni significative di singoli (I RC-Ecomap), coppie (C RC-Ecomap) e famiglie (F RC-Ecomap). Il nuovo strumento è stato operativizzato attraverso la Teoria della Competenza Relazionale di Luciano L'Abate (1995, 2000, 2005). Allo scopo di mostrare il suo utilizzo nella pratica clinica, sono presentati alcuni esempi di applicazioni di RC-Ecomap secondo l'approccio idiografico di un individuo, una coppia, una famiglia e una famiglia problematica. Una serie di ricerche nomotetiche sono presentate per evidenziare le caratteristiche psicometriche, di attendibilità, validità concorrente (versione italiana e spagnola), validità predittiva, validità differenziale (con parenti di pazienti psicotici istituzionalizzati, alcolisti che stanno seguendo un programma riabilitativo, soggetti con alti e bassi punteggi a una scala di Narcisismo) di RC-Ecomap.

I risultati suggeriscono che RC-Ecomap è uno strumento affidabile e valido per l'assessment delle relazioni significative, che evidenziando la sua funzione di collegamento tra pratica clinica e ricerca. Comunque nuove ricerche sono necessarie con campioni più estesi e bilanciati (soprattutto per la versione spagnola) clinici e non clinici.

La presentazione dello studio termina con la proposta di un programma di addestramento all'uso di RC-Ecomap sviluppato nel corso di due anni di esperienza con gli studenti dell'Università di Padova e Siviglia.

## CHAPTER 1

### Introduction: The assessment of intimate relationships in clinical practice and research

We often assist to an undifferentiated use of measure, evaluation and assessment terms, when literature specifies the concepts: *The measure* is an assignment of numbers to objects or events following specific rules; the *evaluation* is a process more complex in which value judgments are made on results on the basis of comparison with standardized criteria. So measurement is the quantitative component of the evaluation process: This component could be missing when evaluation is a qualitative evaluation (Boscolo, 1978). *Assessment* is the term used to look at how the level of quality of a performance or outcome could be improved in the future; it includes strengths that should be sustained as well as high priority areas for improvement. The assessment process is not concerned with the level of quality; only with how to improve the level of quality. Evaluation is the term used to describe the determination of the level of quality. The evaluation process focuses only on the actual level of quality with no interest in why that level was attained (Palomba & Banta, 1999). Several writers have suggested that assessment involves diagnosis, treatment selection, and treatment evaluation (Ciminiero, 1977; Cromwell, Olson, & Fournier, 1981). Keefe, Kopel, and Gordon (1978, p. 16) further dissect the assessment process: «Behavioral assessment involves five general stages: (1) Problem identification; (2) measurement and functional analysis; (3) matching treatment to client; (4) assessment of ongoing therapy; (5) and evaluation of therapy».

In the assessment of intimate relationship, researchers have to conciliate two possible and hazy levels of investigation: Single case level with uniqueness and richness of its data – usually used in clinical practice – and groups of participants level and its standardized measures that generally characterizes the research activity. These two positions are usually reduced to quantity – quality dichotomy, or more appropriately to the categories of Allport (1961) and Nunnally (1978): (a) The idiographic approach (from the Greek “idios”, meaning peculiar, proper) considers each relationship is unique and can be described without a comparison with others relationships; it uses qualitative tools as the interview, the genogram and the eco-map; (b) the nomothetic approach (from the Greek “nòmos”, “law”) assumes the studied elements are generalized: Some characteristics are present in all relationships and can be differentiated by the different intensity of each characteristic. Quantitative instruments are usually used in nomothetic approach such as self-report questionnaire and the different modalities of observer-report. It is possible to conciliate the two approaches to study intimate

relationships by the “Multimethodologic Approach for family relationships” that consists in the use idiographic and nomothetic approach to study the relationship, considering that “ ... different methods give much information on family relationships from different points of view. The joint use of the two approaches permits researchers to obtain different sources of information that can be reassembled within a framework of common sense: It provides a more complete description of the complexity of the studied object.” (Lanz & Rosnati, 2002, p. 55). The idiographic and nomothetic approach still result too far and different methods jointed by a qualitative way.

Harold, Mercier and Calarossi (1997) suggested the Ecomap as an instrument that could link clinical practice and research, qualitative and quantitative method, idiographic and nomothetic approach. It's a paper-and-pencil simulation that maps the ecological system whose boundaries encompass the individual or family (Hartman, 1979, 1995), used in social work practice to measure social support (Early, Smith, & Todd, Beem, 2000; McCormick, Stricklin, Nowak, & Rous, 2008; Rey & Street, 2005; Rempel, Neufeld, & Kushner, 2008), and in clinical practice (Carpenter-Aeby, Aeby, & Boyd, 2007; De Souza and Kantorski, 2009; Hodge, 2008). Although the Ecomap is widely utilized, due in part to its ease of administration, it has not been validated in the literature as a reliable and valid tool in spite of efforts to carry out it (Calix, 2004; Carrà Mittini, 2008).

This study aims to overcome the methodological limits of classic Ecomap, proposing a new reliable and valid Ecomap to assess intimate relationships, for practice and research.

### ***Research plan***

A literature review on traditional Ecomap is reported in Chapter 2: Reference paradigms, the different proposals, the methodological limits, and the proposed solutions. In order to overcome the limits, it was created a new Ecomap (RC-Ecomap) to assess individuals (I RC-Ecomap), couples (C RC-Ecomap), and families (F RC-Ecomap) intimate relationships. The new instrument was based on the Relational Competence Theory of L'Abate (1995, 2000, 2005) (Chapter 3). Examples of RC-Ecomap administration to an individual, a couple, a family, and a problematic family, are presented in Chapter 4, following an idiographic approach. In Chapter 5 a series of nomothetic research studies are presented in order to verify psychometric properties, reliability, internal, and concurrent validity (Italian and Spanish version), predictive, and differential validity (parents of psychotic patients, alcoholics attending a rehabilitative program, high and low scores at the Narcissism Scale, with Italian participants) of RC-Ecomap. The discussion on validity and reliability of RC-Ecomap to

assess intimate relationships in practice and research is presented in Chapter 6. Considerations on paradigmatic implications of RC-Ecomap are presented in Chapter 7. A tested RC-Ecomap training program is presented in Chapter 8.

## CHAPTER 2

### The traditional Ecomap to assess intimate relationships

Many authors indicate the Ecomap as an useful instrument to assess intimate relationships used in complementary way with genograms (Cusinato, 1998; Hodge, 2000; Rempel, Neufeld, & Kushner, 2008). While genograms describe families over time (three generations, with a view to detecting to repeated patterns) (McGoldrick & Gerson, 1985), Ecomaps depict them in space, delineating the major systems that are currently part of an individual's (or family) life as well as individual's (or family) relationships to those systems (Parker & Bradley, 2007).

#### ***The traditional Ecomap***

*The Ecomap framework: From the General Systems Theory to the Ecological Approach*

The Ecomap was developed in 1975 by Hartman (1995) on the basis of principles of The General Systems Theory (Bertalanffy, 1950): The observed object (individual or family) is a system encompassed in a wholeness of other systems that interact together each other ("the whole is more than the sum of its parts"). Systems are open (openness concept) to changes for adapting to other system changes by a self-regulation way (by a feedback process) seeking to achieve equilibrium (homeostasis concept). System does not randomly interact with other systems: Each one is goal-directed (finality concept). The points or destinations can be reached from a myriad ways and beginning at various locations (equifinality concept). General System Theory is a logic-mathematical discipline, which is in itself purely formal, but is applicable to all sciences concerned with systems. Its position is similar to that, for example, of probability theory, which is in itself a formal mathematical doctrine but which can be applied to very different fields, such as thermodynamics, biological and medical experimentation, genetics, life insurance statistics (Bertalanffy, 1950), ...and ecology.

Ecology refers to the study of the connection between a living thing and its environment, and how the connection is maintained and enhanced. It isn't a well defined research and theoretical area, but a shared research perspective from many authors that investigate the relations between behavior and environment. We can find ecological roots in Parson's thought (1909): The individual satisfaction can be understood only knowing characteristics both the individual and environmental. This concept will be formalized by

Lewin (1935, 1951) by his famous equation (behavior = individual x environment): The behavior can be predicted by continuous interactions between people and their environment.

Others psychological theorists show an ecological orientation trying to explain stimulus patterns, physical and social, current in everyday life in how environments impact on individual experiences and behaviors (Le Compte, 1972). Kelly (1966, 1990), for instance, emphasized four principles of ecological analogy: (1) Interdependence in all parts composing a social system; (2) resource distribution and its life cycle; (3) reciprocal adaptation of individuals and environments to changes intervening in the system; and (4) temporal evolution of the system. These principles remain still valid in the present to describe the dynamics of the social environment. If relationships between individual and environment are characterized by reciprocal interdependence and temporal continuity, it is crucial that new stimuli be continuously created to produce a ceaseless adaptation between both the individual and the environment to maintain a mutual balance between the individual and the proximal and distal environmental systems.

Researchers aim to optimize the adaptation process and locate what factors favor compatibility or incompatibility of the link between individuals and their environments – conceived here as specific settings (Conoley & Haynes, 1992). When an individual is in trouble, for instance, the diagnostic evaluation concerns the interaction between the individual and environmental settings. According this, Kelly (1990), individual problems are explained by the discrepancy range among characteristics and values of people in their environment.

An important research trend in which the context can be traced to perceptions shared by the members of a particular setting is found in the work of Moos (1994). Its starting point is based on Murray's theory (1938) of individual-environment interaction in which an individual answers to his/her environment both idiosyncratically and normatively. According to Murray, the environment induces normative expectations defined as "environmental pressures". The shared perceptions of a particular setting are considered one demonstration of environmental pressures (requests) and for that they are conceived as environmental characteristics. According to this model, Moos (Moos, 1994; Moos & Lemke, 1996) developed scales to evaluate the social climate, including the family. Even if these scales vary according to the inquired setting (families, work organizations, social services, barracks), they can lead back to three primary dimensions of social climate of one's environment: (1) *Relationships* (cohesion, support, and involvement); (2) *individual development* (autonomy and growth); and (3) *system stability and change* (rules, expectations, control strategies of environment on behavior).

In parallel with Moos's work, inside industrial and organizations psychology, a series of studies of work climate was developed by Quaglino (1990) to identify in which way different company situations can influence work performance.

Another interesting conception of person-in environment was introduced by Seidman (1988, 1990). To best understand and explain what succeeds in some settings, he appealed to the concept of "social regularity", that is: Routines inside the social relationships established over time among people in a setting. The focus is not on the individual or to the physical structures of that setting, but on the roles and tacit rules organizing in some way relationships among individuals.

Using developmental perspective, some authors (Bronfenbrenner, 1979) believed that the environment can be conceptualized at multiplied levels reciprocally influencing each other. The analysis of a particular level contributes to understanding also other levels. Bronfenbrenner's view, tanks to his articulated and rigorous formulations, generated a series of interested contributions both useful for understanding individual development and mainly contextual roles (Moen, Edler, & Luschen, 1995). The core of his view about "development-inside-context", or ecology of human development, embraces a series of concentric structures grouped as "Chinese boxes" defined *micro-*, *meso-*, *eso-* and *macro-*systems. The *micro system* is the relationship complex in which people have an immediate experience; it includes objects and persons with which the individual interacts inside his/her environment, as the complex series of connections among other persons acting in within the same setting. *Meso system* is defined as the bond among two or more micro systems or settings that an individual frequents or will frequent. Bronfenbrenner created a series of hypotheses concerning the role of the meso system, that development in an individual would favorite "settings" in which he/she is involved as being connected with each. *Eso system* is composed by interconnections among systems with which an individual has a direct experience (micro and meso systems) and in which one could not enter in the future; nevertheless they influence what happens in one's immediate setting. A *macro system* is formed by the more extensive ideological model, normative and organizing the social institutions, for example, the membership in a determined social class, or an ethnic or cultural group. Bronfenbrenner recognized the social-cultural influence on people and vice versa to explain the possibility of social exchange.

A particular aspect of ecology was studied from Foa and Foa (1974) by their model of resource exchange to categorize and identify underlying contents and processes exchanged between individuals. By "resource", those authors meant everything that is transmitted from an individual to another (Foa, 1976) and go as far as to define the six resource classes –

money, goods, information, services, intimacy, and importance – (Donnenworth & Foa 1974, p. 786) with reference to two basic dimensions. The first dimension is the *particularity* that gives “the measure in which the value of a given resource is influenced by individuals involved in the exchange” (Foa & Foa 1974, p. 80). The second is the *concreteness*, showing the “form or type of the expressive characteristics of various resources” (p. 81).

### *The construction of the traditional Ecomap*

The Ecology is the frame work in which the ecologic maps were and are still developed. The traditional Ecomap was derived (Hartman, 1975, 1995) using only the human elements of ecology: The instrument represents the social relationships and social systems that people have created, enabling them to interact more effectively with the physical and the social environment in which they live and work.

As Hartman (1995) has illustrated and Hodge (2000) summarized, the Ecomap is a fun and ease pen-and-paper depiction of the family’s existential relationships to environmental systems: A large circle is drawn around the current members of the family household. The hearth of traditional Ecomap is the connection between the nuclear family systems and various environmental systems of domains (e.g. extended family, health care, recreation, school, works, etc...). Like the family systems, they are drawn as circles, with the names of the respective system placed inside. A line connects the family system with the environmental systems. The thickness of the line represents the strength of the relational connection, with a dashed line depicting the most tenuous connection. A jagged line describes a conflicted relationship. Arrows superimposed on the lines indicate the flow of resources, energy or interest. Descriptive encapsulations can be written along the connecting lines or besides the environmental system depicted by the circle and used as an alternative to arrows or in addition to them. Connections are drawn to the family as a whole, to individual members, or both, depending upon the relationship (Figure 2.1).

The Ecomap can be constructed in three ways: The interviewer may represent data as subject perceive it, the interviewee can do it with the assistance from the interviewer, or by a collaborative discussion between the interviewer and the interviewee (Hartmann, 1995). The main advantages of the Ecomaps are its visual simulation of connections between a family and the environment, its ability to demonstrate the flow of energy into and from the family, and its depiction of nurturing as well as conflicted relationships (Carpenter-Aeby, Aeby, & Boyd, 2007; Compton & Galaway, 1999).

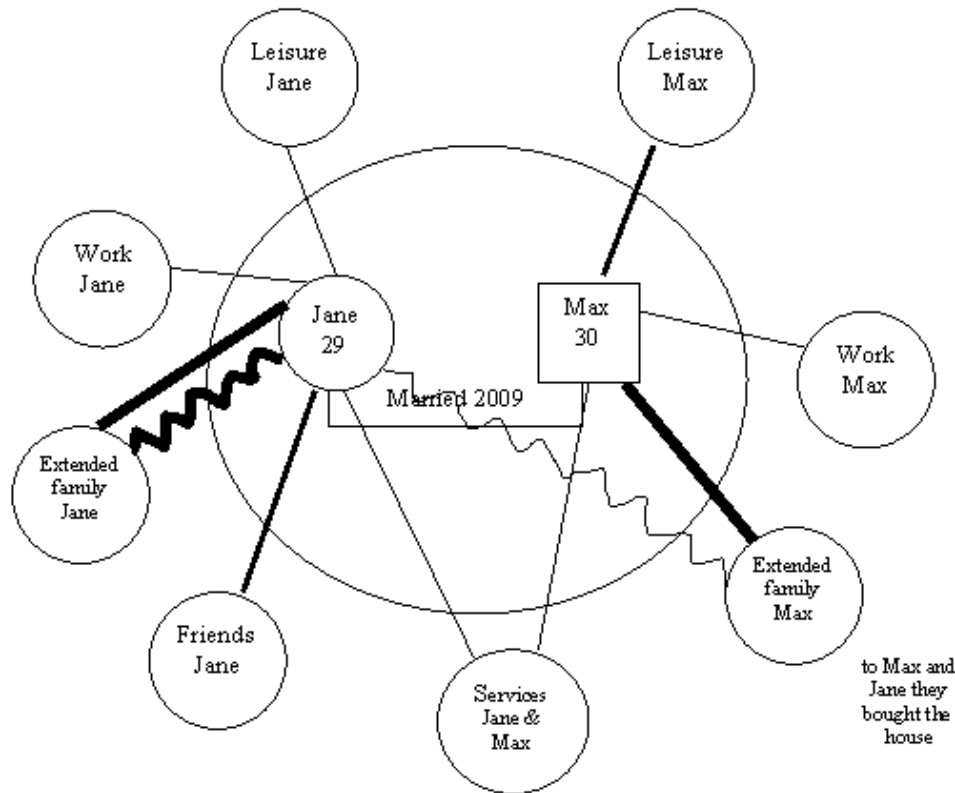


Figure 2.1. Example of traditional eco-map

### ***Different proposals of Ecomaps***

In social work practice the Ecomap is used for assessing the supportive social networks in care's need for support situations: They include those whom the person nominates as having a positive or beneficial influences in their lives. Network members may arise from personal relationships, including families and communities; or institutional relationships including work connections or interactions with formal structures, such as the care health system (McCormick, Stricklin, Nowak, & Rous, 2008; Rey & Street, 2005).

Early, Smith, Todd, and Beem (2000) used a modified eco-mapping process in social network practice to identify the relationships between the needs of people who are dying and the formal and informal support provided. Mapping enabled the researchers to promote awareness of the composition of support network and to identify the associations between the types of relationships, for example intimate, kinship, or formal, and the kind of support available to the people who were dying.

Rey and Street (2005) proposed a modified version and process of Ecomap to study support networks of people living with motor neuron disease: A first Ecomap with examples was showed to train participants to the Ecomap construction; a modification to the traditional

Ecomap was developed to meet the needs of the study. The proposed eco-mapping process permitted researchers to depict the supportive care networks of informal care givers by a visual representation of both actual and potential sources of nurture, indicating possible sources of strain that were further explored in interviews.

De Oliveira, Nascif, and Melo Rocha (2010) used the Ecomap, genogram and an in-depth interview, in nursing team activities to assess families of children with type 1 diabetes mellitus. They aim to help families to adapt to their new situations. They found that identifying supports and social networks allows for more personalized care delivery to each family with a view to health promotion: Families can organize themselves so that there is a division of functions and so that members seek help whenever they feel anguished or insecure regarding the treatment and care of the patient.

Rempel, Neufald, and Kushner (2007) proposed an interesting interactive use of Ecomaps and genograms in family care giving research: Their comparative and concurrent use uncovered data that may not have been apparent the tools were used separate from each other. Analysis revealed patterns of supportive and non supportive interaction that then were further explored to enhance.

If social work practice is interested to Ecomap to assess supportive social networks, clinical practice is interested to Ecomap as an assessing and or intervention tool for families. The focus isn't on supportive networks but on changes assessed and/or produced.

Carpenter-Aeby, Aeby, and Boyd (2007) used Ecomaps as interdisciplinary method of communication among systems when working in a school community with families of "chronically disruptive" students, who show a pattern of misbehavior that interrupts learning in the classroom. The application at six typical cases shows that Ecomap provides a common language and understanding of problem-saturated families by depicting families and students as participating members of the school community who have feelings, emotions, and relationships that may influence the students' ability to perform in school and become productive citizens.

Hodge (2000) created *The Spiritual Ecomap* adapted from the traditional Ecomap. The new instrument depicts connections between spouses or family and Spiritual practices, mother's spiritual tradition, father's spiritual tradition, faith community, God/transcendence, transpersonal beings, and spiritual leaders. The purpose is to highlight the current existential and spiritual dimension in relation to the family system for assessment, planning, and intervention in marital and family therapy.

De Souza and Kantorski (2009) utilized Ecomap to assess individuals undergoing treatment at a Psychosocial Care Center for Alcohol and Drugs Abuse. The aim was to identify the social network of individuals undergoing treatment due to drug abuse, promoting a reflection about the quality and situation of the bonds established with the people they considered important and evidencing points of vulnerability. This information was used to plan interventions.

### ***The limits of Ecomaps***

The Ecomap is confirmed an ease to use diagrammatic instrument. As we have seen, the instrument can be adapted to meet many practical needs: It is possible because of the lack of operationalizing models, derived by validated theories.

In psychology we have a frequent, chaotic, and confusing, equating of theories with models, paradigms with theories, and paradigms with models. L'Abate (2009) proposes a hierarchical framework to differentiate paradigm, theory, and paradigm concepts: A *theory* is a conceptual framework constituted by models that allow direct empirical validation; it's a principle or a body of interrelated principles that purports to explain or predict a number of interrelated phenomena. A *model* is a graphic, theoretical, representation of a concept or construct that can be used for investigative or demonstrative purposes, such as an enhanced understanding of the concept, proposing hypotheses showing relationships, or identifying epidemiological patterns. A *paradigm* is a supra ordinate construct encompassed everything necessary for practicing science, all the way from a set of metaphysical assumptions "at the top" through commitments to apparatus and experimental procedures "at the bottom."

The only theoretical reference of Ecomaps is the ecologic paradigm, a supra ordinate theoretical concept: This condition permits practitioners freely to modify and to adapt the traditional Ecomap that Hartman proposed. It may appear as an advantage for a practical, qualitative and idiographic use, but it's the principal limit for a quantitative and nomothetic utilization.

Several authors attempted to face the problem.

Harold, Mercier, and Calarossi (1997) focused their attention on collecting and organizing data obtained by Ecomaps. In this way the instrument could be used for research to knowledge-building. In this way the Ecomap could bridge a gap between practice and research functions. The interviewers were trained to encourage discussion and description on the contents of building Ecomap; interviews were audio-taped. After each interview was completed, interviewers were asked to reflect on the experiences and to give feedback to the

research. All data were analyzed and organized by proposed coding schemes: One sheet (grid) was used per family unit to record each family member's reported themes and each person's assessment (e.g. line choice of intra-familial relationships). Using this coding method, it was possible easily to identify (1) developmental themes that were important to different members in the family, (2) relationships dynamics between the members such as alliance, conflicts, unspoken tensions, and cut offs. Another coding level involves looking at the consistency between the type of lines that family members chose to describe relationships and the words that they used in talking about those same relationships. Three categories of consistency were coded in "high consistency", "low consistency", and "ambiguous, mixed consistency". Their proposal represents an useful effort to standardize data collected by Ecomap for research using. However, the Ecomap processing proposed is complicated for video-taping data and its analysis, and results coded qualitative information.

Calix (2004) spent her doctoral thesis to verify if the Ecomap is a valid and reliable social work tool to measure social support. She obtained two continuous variables from Ecomap: (a) Connectedness, starting from the types of connections (strong, stressful, and weak/poor) drawn in the Ecomap; (b) People, the number of people depicted in the Ecomap. She correlated Ecomap variables with support measures: The Multidimensional Scale of Perceived Social Support (MPSS) (Zimet, Dahlem, Zimet, & Farley, 1988) and The Young Adult Social Support Inventory (YA-SSI) (McCubbin & Thompson, 1991). Results show an acceptable and satisfactory reliability ( $\alpha = .86$ ; test-retest after three weeks,  $r = .78$ ,  $p < .01$ ), and contradictory correlations with concurrent instruments (Ecomap-MPSS,  $r = .19$ ,  $p = .09$ ; Ecomap/YA-SSI,  $r = .33$ ,  $p < .01$ ). This study evidenced a partial reliability and validity of Ecomap because its limited operationalized variables and the results. It however represents an important attempt to quantify Ecomap and to analyze it by classical testing.

Carrà-Mittini (2008) made a different attempt to supply quantitative proprieties of the Ecomap: She defined it as a self-centered social network so it's appropriated to apply the techniques of Social Network Analyses (SNA) to Ecomap. She could measure some fundamental properties of the self-centered social network, the Ecomap. Starting from matrix of data collected, by applying mathematical and statistical calculations, she could describe the quantitative properties of the network containing relationships. In psychosocial research area, social network concept is linked to supportive network: It's assumed that social networks have a supportive function over of all. The social and supportive network concepts are interactive and bidirectional, although distinct (Prezza e Principiato, 2002). SNA also show substantial limits in defining and operationalizing network concept, social network,

relationships, and supportive network. The main limit is that SNA is neither a theory nor a methodology. Rather, it is a perspective or a paradigm. It takes as its starting point the premise that social life is created primarily and most importantly by relations and the patterns they form. Unlike a theory, social network analysis provides a way of looking at a problem, but it does not predict what we will see. Social network analysis does not provide a set of premises from which hypotheses or predictions can be derived (Marin & Wellman, 2009). The lack of a shared theory for SNA facilitates the spread and proliferations of methodologies are not always supported by sufficient theoretical clarity (Prezza & Principiato, 2002).

As we have seen, in spite of attempts, the lack of theory and models operationalizing Ecomap into a quantitative instrument remains the main methodological and applicative problem of traditional and derived Ecomaps. Starting from these limits, it was decided to create a new Ecomap that could provide quantitative measures to be analyzed by nomotetic and idiographic approaches, for practice and research utilizations.

## CHAPTER 3

# The new proposal: The Ecomap of Relational Competence (RC-Ecomap)

### ***Ecological environment and relationships in the Relational Competence Theory***

The first step was to select a theory that could operationalize the central elements of the Ecomap: The environment that encompass the individual (or the family), the relationships that the person (or the family) has built in the environment, and the contents of relationships. It was found that the Relational Competence Theory (RCT) of L'Abate (L'Abate, 1976, 1994, 1995, 2000, 2002, 2005, 2006, 2008a, b, 2009; L'Abate & Cusinato, 2007; L'Abate & De Giacomo, 2003; L'Abate, Cusinato, Maino, Colesso, & Scilletta, 2010) could satisfy these needs.

RCT focuses on how effectively we deal with each other, with intimates and non-intimates in close/distant, committed/uncommitted, dependent/interdependent/independent, and short/prolonged relationships. *Relational* means bidirectional rather unidirectional interactions with intimates and non-intimates in a continuous interdependent and reciprocal exchange of resources available to us. *Effectiveness* is evaluated by how we feel, how we think, how we act, how we are aware, and how we evaluate proximal and distant subjective contexts as perceived by us. *Theory* means a hierarchical framework akin to the table of organization of any human enterprise with various levels expanding downward from generality to specificity and from abstract to concrete, going from overall general assumptions, theory-specific assumptions, normative models proper, and models clinically relevant to dysfunctional conditions, and the improvement of competence (L'Abate, Cusinato, Maino, Colesso, & Scilletta, 2010). The theory includes 16 models (see Figure 3.1) that encompass relational competence socialization in different settings and in different relationships. It is impossible to disentangle relational competence socializations from its relationships with intimates and non-intimates, because relational competence is circularly and contextually the product and producer at the hearth of those relationships. Socialization occurs through continuous interactions with significant and non-significant others (L'Abate, 2009).

<b>Requirements</b>					
Verifiability	Applicability	Redundancy	Fruitfulness		
<b>Meta-theoretical Assumptions about Relationships</b>					
	Width <sup>1</sup>	Depth <sup>2</sup>	Settings <sup>3</sup>		
Models	ERAAwC <sup>1</sup>	Levels of Interpretation			
	Emotionality	Description	Home		
	Rationality	Presentation	School/work		
	Activity	Phenotype	Transit		
	Awareness	Explanation	Transitory		
	Context	Genotype			
		Generational-developmental			
<b>Theoretical Assumptions about Relationships</b>					
Models	Ability to Love <sup>4</sup>	Ability to Negotiate <sup>5</sup>	Both Abilities <sup>6</sup>	Contents <sup>7</sup>	
Dimensions	Distance	Control	Functionality	Modalities	
	Approach/ Avoidance	Discharge/Delay	High/Middle/ Low	Being/Doing/ Having	
Models	Self-differentiation <sup>8</sup>	Relational Styles <sup>9</sup>	Interactions <sup>10</sup>	Selfhood <sup>11</sup>	Priorities <sup>12</sup>
Dimensions	Likeness Continuum	AA/RR/CC	Functionality	Importance	Survival/Enjoyment
	a Symbiosis/ Alienation	Abusive/ Apathetic	Divisive	No-self	Vertical: Self/ intimates
	b Sameness/ Oppositeness	Reactive/ Repetitive	Subtractive/ Static - or +	Selfless/ Selfish	Horizontal: Settings
	c Similarity/ Differentness	Conductive/ Creative	Additive/ Multiplicative	Selffull	
<b>Applications of the Theory</b>					
Models	Distance Regulation <sup>13</sup>	Drama Triangle <sup>14</sup>	Intimacy <sup>15</sup>	Negotiation <sup>16</sup>	
Dimensions	Pursuer/Distancer /Regulator	Victim/ Persecutor/ Rescuer	Sharing Joys, Hurts, & Fears of Being hurt	Structure/Process (Ill, Skill, Will)	

**Figure 3.1. Summary of a Theory of Relational Competence in Intimate Relationships (L'Abate, Cusinato, Maino, Colesso, & Scilletta, 2010)**

With regard to ecological environment, RCT asserts relational competence starts and is developed in specific *settings* of daily life in which the individual has the opportunity to get in touch with intimates and express himself both verbally and with behaviors and attitudes. They are “where the relationships take place”. RCT distinguishes between *setting* and *context*. Distinguishing the settings is important to understand and evaluate the individual and its psychological functions. A person can obtain a great success in a setting and a great failure in another. For example, an efficient white collar could be a no integrated member in his family. Distinguishing among setting permits us to grasp functions of intimate and no intimate relationships, and their weight on economic and physic well-being of the individual or family. Thus RCT classifies settings taking into account the quantity and quality of exchanged resources; for example importance and intimacy is easier to find them in home setting than work setting. It’s easier to find money in the bank. RCT defines settings as: (a) home; (b) school/work; (c) enjoyment; (d) transitory settings (banks, shops, stores, ...); (e) transit settings (airplanes, buses, cars, ...). For purposes of quantitative analysis, setting has been collapsed into four major categories: (1) home; (2) school/work; (3) survival, those necessary to live, such a transit and transitory settings; and (4) enjoyment, those necessary to have fun. The settings are however, objective entities: You can see them, and you can touch and walk across them. They are qualitatively and quantitatively different from what RCT defines *contexts*. Context means “as relationships take place” (L’Abate, 2005, p. 111): They represent the subjective perception and interpretation of the settings. Contexts are perceived in different and subjective ways by several observers inside the same setting and on the basis of the quantity and quality of relationships that there take place: Survival settings as banks, supermarkets, and service stations, have different subjective meanings than home, school or workplace where people spend much of their time and they also establish an emotional attachment. The concept of context has a stability over time: It permits the individuals verifying their relations with resources to survive and/or feel good, developing emotional attachments; it emerges from the positive and negative experiences lived in that setting; it’s derived from intimate relationships (close, prolonged, interdependent, and committed) and non intimate relationships (temporary, distal, commercial and financial).

*Relationships* correspond to the nature of the people who build “transactional relationship” with the characteristics of the others and between generations (Bergman, Magnusson, & El-Khouru, 2003; Gergen, 1994). Socialization, in fact, occurs among intimates and non intimates in the settings where people live to surviving and seeking the well-being. The intimate relationships are prevalent because emotionally connected, closed,

prolonged, interdependent, and committed to share common responsibilities; functional relationships transcend individual personalities of partners and/or members. In dysfunctional intimate relationships they fail to work over time, they could be produced or produce personality disorders and individual psychopathology. This is the reason for which Reis, Collins, and Berscheid (2000, p. 845) asserted that intimate relationships are the focus of the “Science of relationships.”

The topics or *contents* of intimate and non intimate relationships are described by resources classes derived from Foa’s research (Donnenworth & Foa, 1974; Foa, 1993; Foa & Foa, 1974): Intimacy, importance, information, services, goods, and money. L’Abate inserts and elaborates Foa’ classes, by combining the resources he derives a new criterion for classification of relationship contents: Presence (intimacy and importance), the ability to be emotionally available; doing or performance (services and information); having or production (money and goods). By combining performance (doing) and production (having) is obtained the *power* relational orientation and content: Who exerts the control, in whole or in part, on performance and production can exert a certain power control. The power construct permits us to qualify relationship contents by a new criterion: Power or presence. Being or presence is important in intimate, prolonged, closed and committed relationships. Doing or performance is preeminent in educative institutions, schools, newspapers, media, and professional places. Having or production is relevant in industry, agriculture, banks and economic institutions. From an ontogenetic point of view, the content of resources and modalities change along the life cycles: Being is relevant in the relationships of first five years of life; doing is important in the age from elementary to college school; having characterizes relationships the age of work life where money and goods are needed.

*Priorities* are further elements that RCT uses to define settings, contexts and relationships: The different importance that individuals attribute to each relationship among individuals, among individuals and objects, and among objects. They are related to life choices, to the importance attributed to a person, an object, an activity or to the self related to other persons. Priorities are referred to settings and contexts within each setting too. The importance attributed to a setting can be enhanced or decreased on the basis of the importance attributed to the others settings. For example, leisure activities in enjoyment setting can reduce the stress in home and/or work setting. The modalities that an individual uses to balance and manipulate the persons and settings demands reflect his priorities system: They motivate people to negotiate with themselves and intimates; reduced, confused, or dysfunctional priorities can cause a lack of intimacy and attraction with intimates. At an

operative level, priorities can be inferred by the way to balance the being, having, and doing modalities of individuals, couples or families or by their survival and wellbeing relationships. Survival relationships are related to the work, to the salary that is necessary to satisfy personal and family needs. Wellbeing relationships are related to the satisfaction for the activities performed, included rest and nothing activities.

Among priorities, RCT distinguishes vertical priorities – related to the relationship, in the order, with the self, intimates, others, parents, colleagues, sons and daughters, relatives, friends, and neighbors, that are the persons that compose “the social network breathing” (Reis, Clark, & Holmes, 2004, p. 210) – and horizontal priorities related to the opportune hierarchy among the settings of life: Home, school/work, survival, and enjoyment.

Among the 16 models that operationalize the RCT, some models are explicitly referred to ecological elements: Identification of settings (and contexts) of life (Model 3); identification of significant relationships (Model 11) and their contents (Model 7); priorities related to individuals, couples, families, and settings (Model 12).

### ***The construction of the Relational Competence Ecological map (RC-Ecomap)***

By the mentioned models, operationalizing the RCT, was created the Relational Competence Ecological map (RC-Ecomap): It permits to describe and measure the dimensions related to the Models 1, 3, and 11: Settings, contexts, and contents of relationships.

The *settings*, the places where relationships are developed, are defined: *Home* (family setting), *Work* (work place or school), *Survival* (transit and transitory settings usually frequented for primary needs), and *Enjoyment* (setting where are managed free time and wellbeing activities). Setting measures contain relationships aspects you can see in each specific setting: The individuals and the *frequency* of contact with which participant has meaningful relationships in each setting.

The *relationships* are those of individuals that maintain a prolonged and significant contact with the subject: They are measured by a subjective meaning index obtained by multiplying the *frequency* of the contact by the *self interest* for the relationship, and by the perceived *other interest* for the relationship. The single measures and their sums represent *context* indexes at an individual or setting global level; they contain setting and subjective elements.

*Relationship contents* were coded according to three levels: Resources, modalities, and orientation of relationship. The resources are: *money, goods, services, information,*

*importance*, and *intimacy*. By adding two by two the resources we obtain the three modalities of *having* (money & goods), *doing* (information & services), and *being* (importance & intimacy). At a supra ordered level we define the relationship orientation of *power* (having & doing) e *presence* (being). The level of content to be considered depends on the research target. Content measures are obtained multiplying context indexes of individuals by quantity of each specific resources (or modality) adding them at a setting or global level. These last measures contain setting and context measures. Examples of relationship contents per settings are reported in Figure 3.2.

Orientation	Modalities	Resources	Examples of Resources exchanged by Places			
			Home	Work/School	Necessary for Living	Pleasure
Presence	Being	Importance	Valuing oneself, feelings valued, recognition's of one's goodness and value, feeling as a person who matters	Status related to Job or Profession, Level of education; titles, ranks, & honors	Positive attribution of Important to self and intimates	Free expression of pleasure to see and welcome friends and intimates
		Intimacy	Sharing of confidences, joys, hurts, and fears of being hurt, affection, forgiveness of transgressions, emotional closeness	Not included or considered irrelevant or secondary to work/school performance; Avoided as much as possible	Ability to share hurt feelings with self and intimates, forgiving transgressions in self and intimates	Reflecting on one's own positive behavior, sharing confidences with intimates & friends without Doing or Having
Power	Doing	Information	Books, internet, magazines, newspaper, radio, telephone, TV	Knowledge relevant to job, occupational, or professional performance	Keeping up with news and with happenings within one's world & community	Crossword puzzles, brain teasers, virtual pursuit; computer and word games
		Services	Cooking, taking care of trash, cleaning chores, fixing house, taking care of bills, cars, taxes, school and work, etc.	Blue- or white-collar jobs or educational or reliable occupational or professional performance	Shopping wisely, keeping within one's budget; planning for the future;	Volunteering, exercising, competing in marathons, playing, walking, sports, etc.
	Having	Goods/possessions	Car(s), food, furniture, TV, radio, house, second home &/or land, clothing, jewelers, etc.	Work station, size and style of cubicle or office	Avoiding debts by not buying extravagantly	Hobbies requiring manipulation of objects; play, collecting
		Money	Bank account, cash at hand, credit card, salary, other income	Salary plus bonus, insurance, perks, benefits	Savings, controlled use of credit cards;	Used to have fun, movies, travel, and theater.

**Figure 3.2. Examples of Resources, Modalities, and Relational Orientation, exchanged in each setting**

The elements and relative theoretical model of RCT has been considered to create a relational competence ecological map are summarized in Figure 3.3.

All the elements of RC-Ecomap can be measured to an individual (I RC-Ecomap), couple, (C RC-Ecomap), or family (F RC-Ecomap) level.

Setting	Relationships	Context	Relationship contents		
			Resources (Model <sup>7</sup> )	Modalities (Model <sup>7</sup> )	Relational orientation (Model <sup>7</sup> )
Objective (Model <sup>3</sup> & Model <sup>12</sup> )	Elements of each intimate relationship	Subjective (Model <sup>3</sup> & Model <sup>12</sup> )			
Home	Frequency	Home	Money	Having	Power
Work	Self interest (Model <sup>11</sup> )	Work	Goods		
Survival		Perceived other interest for the relationships (Model <sup>11</sup> )	Survival	Services	
Enjoyment	Enjoyment		Information		
			Importance (Model <sup>11</sup> )	Being	Presence
			Intimacy (Model <sup>15</sup> )		

Model<sup>3</sup> = Socialization Settings for Relational Competences - Setting - Context

Model<sup>7</sup> = The Triangle of Living: Being - Doing - Having

Model<sup>11</sup> = Selfhood: sense of importance attributed with the Self and the intimate others.

Model<sup>12</sup> = Priorities: Survival and Enjoyment.

Model<sup>15</sup> = Intimacy.

**Figure 3.3. Elements for a relational competence ecological map**

### ***RC-Ecomap: How to use it***

RC-Ecomap process is run by three phases: (1) recording of answer; (2) elaboration of answers received; and (3) return of elaboration, interpretation with the participant, integration of the evaluation, and completion of the assessment process. Possible diagnosis can close the RC-Ecomap running.

### Administration

The participant is proposed a structured application using appropriate Answer Sheets. The Answer Sheet presented in Figure 3.4 is the 2010 version. The previous version of 2009 was qualitatively the same, but with a lower number of levels to evaluate questions. It was decided to extend steps of evaluations to have a greater variance of score distribution.

Setting: Home *		1			2			3					
A. Significant persons**:		role	gender	age	role	gender	age	role	gender	age			
B. Frequency of the contact***:		1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
C. Self interest for relationship****:		1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
D. Perceived other interest for relationship****		1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
E: Contents of relationship	Money *****	1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
	Goods	1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
	Services	1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
	Information	1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
	Importance	1 5	2	3	4	1 5	2	3	4	1 5	2	3	4
	Intimacy	1 5	2	3	4	1 5	2	3	4	1 5	2	3	4

\* The Answer Sheet contains four tables, one for each setting: Home, Work, Survival, and Enjoyment.

\*\* The number of columns is the number of significant persons designed by the subject.

\*\*\* 1 = intermittent ; ... 5 = constant

\*\*\*\* 1 = very little ; ... 5 = very much

\*\*\*\*\* 1 = for nothing; ... 5 = very much.

**Figure 3.4. RC-Ecomap Answer Sheet to collect data**

Compilation usually takes 10 to 20 minutes. Data collection is carried out individually for each form of RC-Ecomap. The subject fills the answer sheet with intimate relationships – those of individuals that maintain a prolonged and significant contact with the participant – in each setting, its role, age, gender, frequency of the contact (1 = intermittent ; ... 5 = constant), own interest to relationship (1 = very little ; ... 5 = very much), the perception of the other interest for the relationship (1 = very little ; ... 5 = very much), and then the contents with relative quantity (1 = for nothing; ... 5 = very much). The same person can be reported in different settings.

The data recording process follows. We cannot exclude that with certain participants or in specific situations there may include introduction of various cartoon figures showing the various elements of the RC-Ecomap. Here is where the graphic construction of the RC-Ecomap progresses according to an interactive process between the examiners and participants.

*Data recording, measurement of RC-Ecomap indexes and analysis*

Data are inserted in a Data Table in which we can calculate: (a) Setting indexes, ( $S_i = \text{relationship} \times \text{frequency}$ ); (b) Context indexes ( $C_i = \text{frequency} \times \text{own interest} \times \text{perceived other interest}$ ) that give a measure of the subjective perception of the relationship; (c) content of relationships Indexes at a Resource level –  $RI_x (C_i \times \text{resource content intensity})$ , Modality level –  $MI_x (C_i \times \text{modality content intensity})$ , or at a relational Orientation level –  $OI_x (C_i \times \text{Relational Orientation content intensity})$ ; (d) Interactions Context\*Resources indexes (e.g.  $H_m = \text{Home} * \text{Money}$ ). We can see quantitative RC-Ecomap variables in Figure 3.5.

RC- ECOMAP	Person			Interaction				Resources						
	role	sex	age	freq	Self interest	Other interest	Context index	money n. m/i	goods n. g/i	services n. s/i	Inform. n. i/i	Import. n. im/i	intimacy n. in/i	
home														

home																		
home																		
<b>TOT</b>	<b>H SI</b>			<b>H CI</b>			<b>H m</b>	<b>Hg</b>	<b>Hs</b>	<b>Hif</b>	<b>Him</b>	<b>Hin</b>						
work																		
work																		
work																		
<b>TOT</b>	<b>W SI</b>			<b>W CI</b>			<b>W m</b>	<b>Wg</b>	<b>Ws</b>	<b>Wif</b>	<b>Wim</b>	<b>Win</b>						
survival																		
survival																		
survival																		
<b>TOT</b>	<b>S SI</b>			<b>S CI</b>			<b>S m</b>	<b>Sg</b>	<b>Ss</b>	<b>Sif</b>	<b>Sim</b>	<b>Sin</b>						
enjoyment																		
enjoyment																		
enjoyment																		
<b>TOT</b>	<b>E CI</b>			<b>E CI</b>			<b>Em</b>	<b>Eg</b>	<b>Es</b>	<b>Eif</b>	<b>Eim</b>	<b>Ein</b>						
<b>TOT</b>							<b>RIm</b>	<b>Rlg</b>	<b>Rls</b>	<b>Rlif</b>	<b>Rlim</b>	<b>Rlin</b>						

Figure 3.5. RC-Ecomap Data Table to insert and calculate RC-Ecomap indexes

RC-Ecomap indexes are weighted scores obtained from each intimate relationship reported in data sheet. Their definition, by multiplying and adding, are according to Arithmetical Interactions Model of RCT (Model 10). In Figure 3.6 is presented an example of RC-Ecomap Indexes calculation.

RC-Ecomap indexes can be used at an individual level (Individual RC-Ecomap: I RC-Ecomap), couple level by adding partner indexes (Couple RC-Ecomap: C RC-Ecomap), and at a family level by adding individual RC-Ecomaps of a family (Family RC-Ecomap: F RC-Ecomap).

RC-Ecomap quantitative variables can be used in idiographic approach or nomothetic approach, for a clinical or research use.

In idiographic approach data can be processed by Log-linear model analysis (Dancer, Anderson, & Derlin, 1994; Kennedy, 1992; Robusto & Cristante, 2001): They are quantitative analysis on qualitative variables/categories by definition. So they are able to assess the categories of settings, intimates, resources and their interactions within a single case. Settings may be considered separately or can be opportunely combined. Relationships can be monitored in regard to persons that are “habitually met with significant contacts” or with

persons with more limited quality and quantity of contacts. Resources can be analyzed by considering six distinct dimensions or as the three modalities of Being, Doing, or Having.

RC-ECOMAP Data Table								money	goods	services	information	importance	intimacy						
rol	sex	age	freq	Self interest	Other interest	CS	m	CSm	g	CSg	s	CSs	if	CSif	im	CSim	in	CSin	
Home	housban	M	30	4	5	5	<b>100</b>	2	<b>200</b>	3	<b>300</b>	3	<b>300</b>	5	<b>500</b>	5	<b>500</b>	5	<b>500</b>
<b>Home indexes</b>				<b>4</b>			<b>100</b>		<b>200</b>		<b>300</b>		<b>300</b>		<b>500</b>		<b>500</b>		<b>500</b>
Work	collegue	F	24	4	3	3	<b>36</b>	1	<b>36</b>	1	<b>36</b>	2	<b>72</b>	4	<b>144</b>	3	<b>108</b>	2	<b>72</b>
	collegue	F	23	3	3	3	<b>27</b>	1	<b>27</b>	1	<b>27</b>	2	<b>54</b>	3	<b>81</b>	3	<b>81</b>	2	<b>54</b>
<b>Work indexes</b>				<b>7</b>			<b>63</b>		<b>63</b>		<b>63</b>		<b>126</b>		<b>225</b>		<b>189</b>		<b>126</b>
Survival	medico	M	54	3	5	4	<b>60</b>	1	<b>60</b>	1	<b>60</b>	4	<b>240</b>	4	<b>240</b>	3	<b>180</b>	2	<b>120</b>
	psychology	F	48	4	4	4	<b>64</b>	1	<b>64</b>	1	<b>64</b>	4	<b>256</b>	4	<b>256</b>	4	<b>256</b>	2	<b>128</b>
	estetista	F	24	4	3	3	<b>36</b>	1	<b>36</b>	1	<b>36</b>	1	<b>36</b>	3	<b>108</b>	3	<b>108</b>	3	<b>108</b>
<b>Survival indexes</b>				<b>11</b>			<b>160</b>		<b>160</b>		<b>160</b>		<b>604</b>		<b>604</b>		<b>544</b>		<b>356</b>
Enjoyment	mother	F	46	3	4	4	<b>48</b>	1	<b>48</b>	2	<b>96</b>	3	<b>144</b>	3	<b>144</b>	4	<b>192</b>	4	<b>192</b>
	father	M	57	3	3	4	<b>36</b>	3	<b>108</b>	4	<b>144</b>	3	<b>108</b>	3	<b>108</b>	3	<b>108</b>	2	<b>72</b>
	brother	M	18	3	4	4	<b>48</b>	2	<b>96</b>	3	<b>144</b>	3	<b>144</b>	4	<b>192</b>	4	<b>192</b>	4	<b>192</b>
	friend1	M	22	3	4	4	<b>48</b>	3	<b>144</b>	3	<b>144</b>	3	<b>144</b>	4	<b>192</b>	4	<b>192</b>	4	<b>192</b>
	friend2	M	24	3	4	4	<b>48</b>	1	<b>48</b>	2	<b>96</b>	2	<b>96</b>	4	<b>192</b>	4	<b>192</b>	4	<b>192</b>
	friend3	F	23	5	5	5	<b>125</b>	1	<b>125</b>	2	<b>250</b>	2	<b>250</b>	5	<b>625</b>	5	<b>625</b>	5	<b>625</b>
	friend4	F	20	4	4	4	<b>64</b>	1	<b>64</b>	1	<b>64</b>	2	<b>128</b>	5	<b>320</b>	5	<b>320</b>	5	<b>320</b>
<b>Enjoyment indexes</b>				<b>24</b>			<b>417</b>		<b>633</b>		<b>938</b>		<b>1014</b>		<b>1773</b>		<b>1821</b>		<b>1785</b>
<b>Resources Indexes</b>							<b>740</b>		<b>1056</b>		<b>1461</b>		<b>2044</b>		<b>3102</b>		<b>3054</b>		<b>2767</b>

Figure 3.6. Example of Base Table to calculate RC-Ecomap quantitative variables of an individual

Furthermore, either resources or modalities can be reduced to constructs of Presence and Power, as defined above. In C-RC-Ecomap and F-RC-Ecomap participants can be cross-indexed either – as individuals or as units – with resources, modalities, or constructs. These analyses indicate the quality of relational contexts as lived by individuals, couples, or families as derived from vertical and horizontal priorities elicited by the relevant instructions. From these priorities, conclusions can be reached about the level and quality of relational competence. To evaluate the relevance of each variable and relationships among the various variables, bivariate contingency tables are derived.

Using Log-linear analyses, marginal and cross-indexed parameters and their relative significance are reached. Sanchez (2008) developed a very inexpensive Excel program to facilitate these analyses. From statistically significant parameters it is possible to report the value of each estimate and relative error probability. After first RC-Ecomap utilizations, was decided to focus – and so standardize – Log-linear analysis on significant two specific contingency tables: Significant individual x relationship contents and contexts x relational contents. Following the previous example we obtain the following contingency tables (Figures 3.7 and 3.8).

Contingency Table 13x 6 Persons x Contents		Contents of relationships					
		money CSm	goods CSg	services CSs	information CSif	importance CSim	intimacy CSin
Persons:	husbandM30	200	300	300	500	500	500
	colleagueF24	36	36	72	144	108	72
	colleagueF23	27	27	54	81	81	54
	medicalM40	60	60	240	240	180	120
	psychologistM48	64	64	256	256	256	128
	beauticianF35	36	36	36	108	108	108
	motherF46	48	96	144	144	192	192
	fatherM48	108	144	108	108	108	72
	brotherM18	96	144	144	192	192	192
	friend1M22	144	144	144	192	192	192
	friend2M24	48	96	96	192	192	192
	friend3F23	125	250	250	625	625	625
	friend4F20	64	64	128	320	320	320

**Figure 3.7. Persons x Relationship Contents (Resources): contingency table for log-linear analysis**

Contingency Table 13x 6 Contexts x Relationship Contents		Contents of relationships					
		money CSm	money CSm	money CSm	money CSm	money CSm	money CSm
Context	Home	200	300	300	500	500	500
	Work	63	63	126	225	189	126
	Survival	160	160	532	604	544	356
	Enjyment	633	938	1014	1773	1821	1785

**Figure 3.8. Context x Relationship Contents (Resources) contingency table for log-linear analysis**

Applying Log-linear analysis to cross-tables we obtain results for marginal standardized parameters for significant persons (Table 3.1), Contexts (Table 3.2), and Contents of exchanged resources (Table 3.3); their statistical significances are referred to equiprobability hypothesis. The statistical significance and the sign of parameters permit to rank categories in three (or two or one) different levels of scores: High, medium, and low. To give a meaning to marginal results, within the single case, we have to remember the weighting of the variables, in the RCT: The product of each significant person by frequency of the contact, by self interest for relationship, and by perceived other interest for relationship, for each setting. These “contextual”, and consequently supportive, measures at a significant person level may be compared between them to rank significant persons: The marginal standardized parameter of significant person’s scores. The sum of significant persons for each setting gives us measures of perceived relationships and support to a setting level, the contexts that may be compared between them: The marginal standardized parameters of contextual scores for contexts. The sum of contents of each relationship (multiplied by the “contextual” weight of that relationship) gives us weighted measures of resources (or modality or relational orientations) exchanged, that may be compared between them: The marginal standardized parameters of contextual scores for resources. From Table 3.1 we can see the participant perceives as more supportive, the relationships with the husband, the psychologist, the brother, and three friends than others. In Table 3.2, we understand the participant establishes significant relationships over of all in enjoyment setting, then in Home Setting, and to a lesser extent in Work and Survival settings than first two. In Table 3.3 we can see contents of relationships of participants focused on importance, intimacy, and information than other exchanged resources.

**Table 3.1. Marginal standardized parameters of contextual scores for significant persons.**

husband	colleg. 1	colleg. 2	medica l	psychologi st	beauticia n	mothe r	father	brothe r	friend1	friend2	friend3	friend 4
43.66***	-	-	-0.46	2.61**	-	-1.52	-	5.31**	7.67**	-2.01*	39.87*	5.80**
	12.96*	17.00*			14.13**	5.45**	*	*	*		**	*
	**	**			*	*						

\* $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.2. Marginal standardized parameters of contextual scores for contexts.**

Home	Work	Survival	Enjoyment
-0.53	-36.35***	-3.18***	76.83***

\*\*\*  $p < .001$

**Table 3.3. Marginal standardized parameters of contextual scores for resources.**

Rlm (money)	Rlg (goods)	Rls (services)	Rlif (information)	Rlim (importance)	Rlin (intimacy)
-20.35***	-13.52***	-0.73	20.77**	19.52***	10.01***

\*\*  $p < .01$ ; \*\*\*  $p < .001$

Other results we can obtain are those referred to interactions of significant person x resources (Table 3.4) and context x resources (Table 3.5), where statistical significance is referred to multiplicative independence hypothesis. If the meaning of results for marginal standardized parameters can be clear, the same cannot be said for results of parameters of interaction. My experience with idiographic utilization of RC-Ecomap tells me that may be difficult to give meaning to interactions between categories and it's more fruitful to interpret them with the participant.

**Table 3.4. Standardized parameters of interaction significant persons x resources.**

significant persons	Rlm money	Rlg goods	Rls service	Rlif information	Rlim importance	Rlin intimacy
husband	0.79	3.78***	-3.14	-2.38**	-1.88*	2.08*
colleague1	0.00	-1.78*	0.64	3.82***	0.52	-1.75*
colleague2	0.30	-1.25	0.96	0.71	0.92	-1.11
medical	-1.07	-3.35***	9.85	3.08***	-0.98	-3.66***
psychologist	-1.56	-3.91***	9.40	2.41**	2.76**	-4.40***
beautician	0.69	-1.08	-3.86	1.33	1.57	3.51***
mother	-2.52**	1.67*	2.26	-3.64***	0.53	3.10***
father	7.63***	9.02***	0.45	-4.89***	-4.62***	-6.23***
brother	1.85*	4.28***	-0.78	-3.31***	-2.97**	-0.26
friend1	6.59***	3.41	-1.71*	-4.38***	-4.04***	-1.29
friend2	-2.35**	1.88	-2.40**	0.49	0.81	3.37***
friend3	-5.04***	0.96	-5.59***	3.40***	3.91***	7.89***
friend4	-2.63**	-4.99	-2.66**	4.52***	4.89***	7.88***

\* $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.5. Standardized parameters of interaction contexts x resources.**

Contexts	Rlm money	Rlg goods	Rls services	Rlif information	Rlim importance	Rlin intimacy
Home	1.18	5.32***	-4.77***	-4.02***	-2.33**	3.02**
Work	0.40	-1.92*	0.54	3.21***	1.06	-2.07*
Survival	-1.60	-4.93***	10.02***	2.52**	1.35	-3.62***
Enjoyment	-0.09	4.59***	-6.60***	-3.92***	-0.73	5.45***

\* $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Nomothetic approach analysis permits to compare RC-Ecomap indexes between groups to evaluate social network characteristics. As RC-Ecomap indexes are categorical data, they

resource (or modalities or

### *Graphical depicting of results*

Results are represented by diagrammatic simulations useful in the restitution phase both for idiographic and nomothetic analysis. In idiographic assessment, the Restitution RC-Ecomap is the instrument that practitioners could use with individuals to increase awareness of own social network, to enhance specific context and contents relationships, and to assess changes in social network. The logic of the Ecomap summarizes the results from the foregoing analyses into a synthetic figure obtained from the statically based results that are relevant to the priorities and the level of RC. Again, the choice of whether to administer the RC-Ecomap individually to partners or to family members rather than administer it to partners and family members together is dependent on how much time is available to participants and examiners. Nonetheless, the graphic elements needed to choose whether to administer the RC-Ecomap to single individuals or in pairs or the whole family unit, are contained in Figure 3.9. The four quadrants distinguish the respective settings according to whether they are *home*, *work*, *survival*, and *enjoyment*. As far as the two last terms are concerned in the instructions might be more useful to use simple terms such as settings of necessity and settings of free choice, with males describe by a square □ and females with a circle ○ linked to other intimates. At the external sides of each quadrant the available resources are listed with modalities or constructs altogether or alternatively. In the lower part of the map specific settings can be listed to continue the evaluation with the participant. The various elements of the Ecomap can be marked in different ways if the analyses indicate a positive or negative statistical significance. In Figure 3.9 is reported an individual Restitution RC-Ecomap. If the meaning of marginal parameters may seem easy to read and interpret, same cannot be said for the interaction parameters. The map for restitution (e.g. Figure, 3.9) however, is so constructed that all the indications emerging from the analysis can be used as a stimulus for discussion and interpretation with the subject. At the end of the discussion on the results, the evaluator will have all the elements to complete the relational assessment.

Diagrammatic simulations of specific groups of subjects may be useful for researchers to project preventive interventions.

The logic of the RC-Ecomap summarizes the results into a synthetic figure obtained from the statically based results that are relevant to the contexts and resource levels, for the utilization in practice (Figure 3.9) or research (Figure 3.10).

### RC-Ecomap

Subject: Ann 24 y.o.  
Date: 04-27-2010

Sign and significance of the marginal parameter of the resources

Sign and significance of the marginal parameter of the contexts

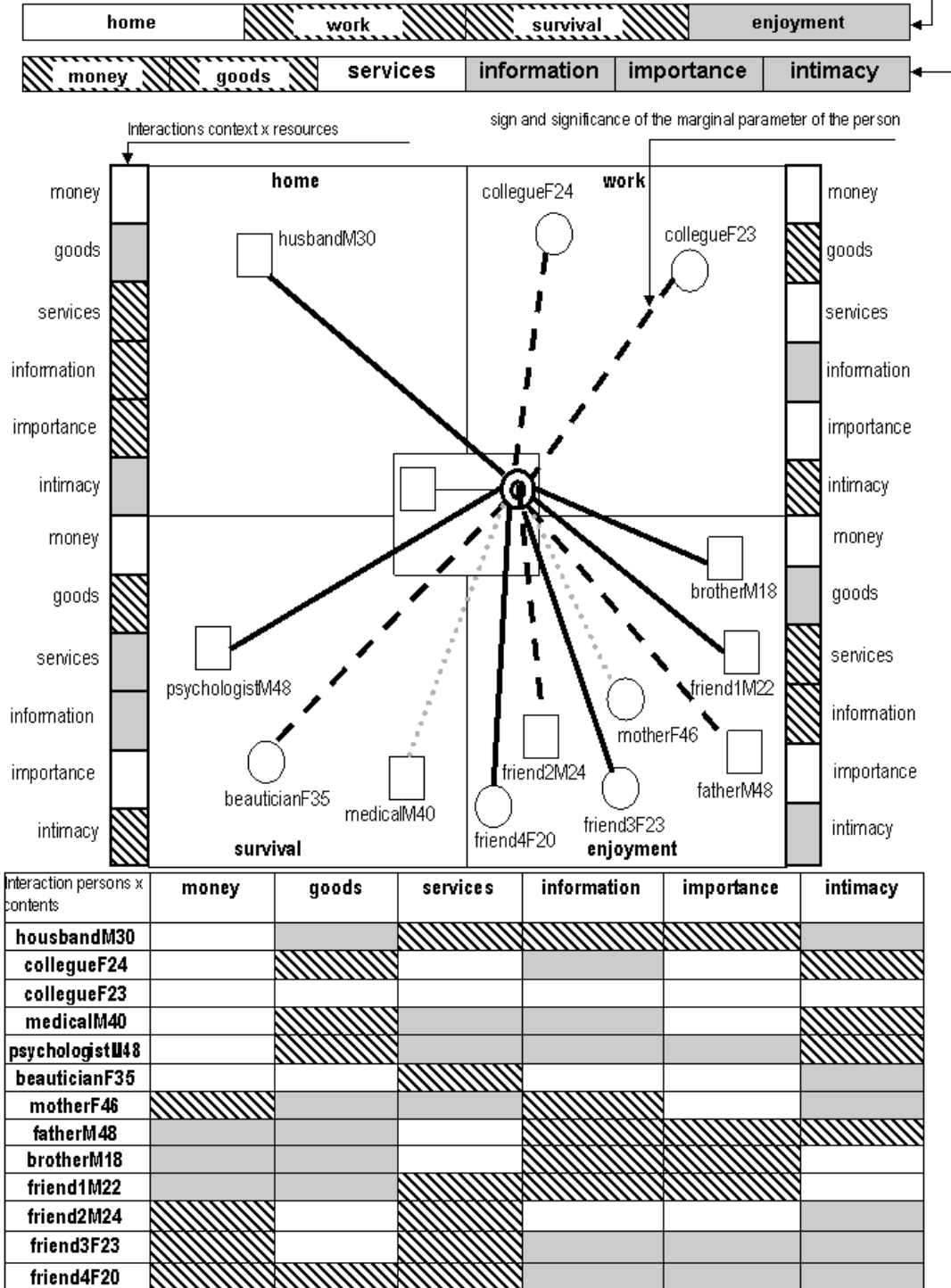


Figure 3.9. Restitution of a idiographic RC-Ecomap

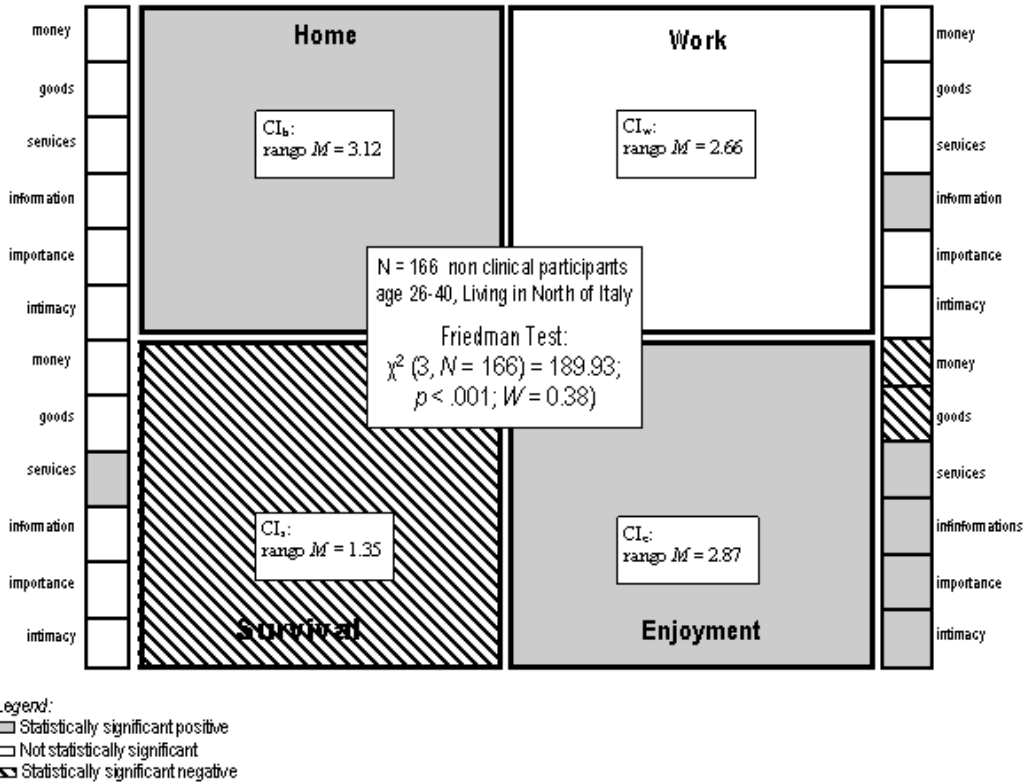


Figure 3.10. Restitution of a nomothetic RC-Ecomap

Built the new instrument, the next step was to apply it according to idiographic and nomothetic approach to show practical use, research use, psychometric properties, reliability, and validity evidences of the tool.

## CHAPTER 4

### RC-Ecomap for the study of individual cases<sup>(1)</sup>:

#### The idiographic approach

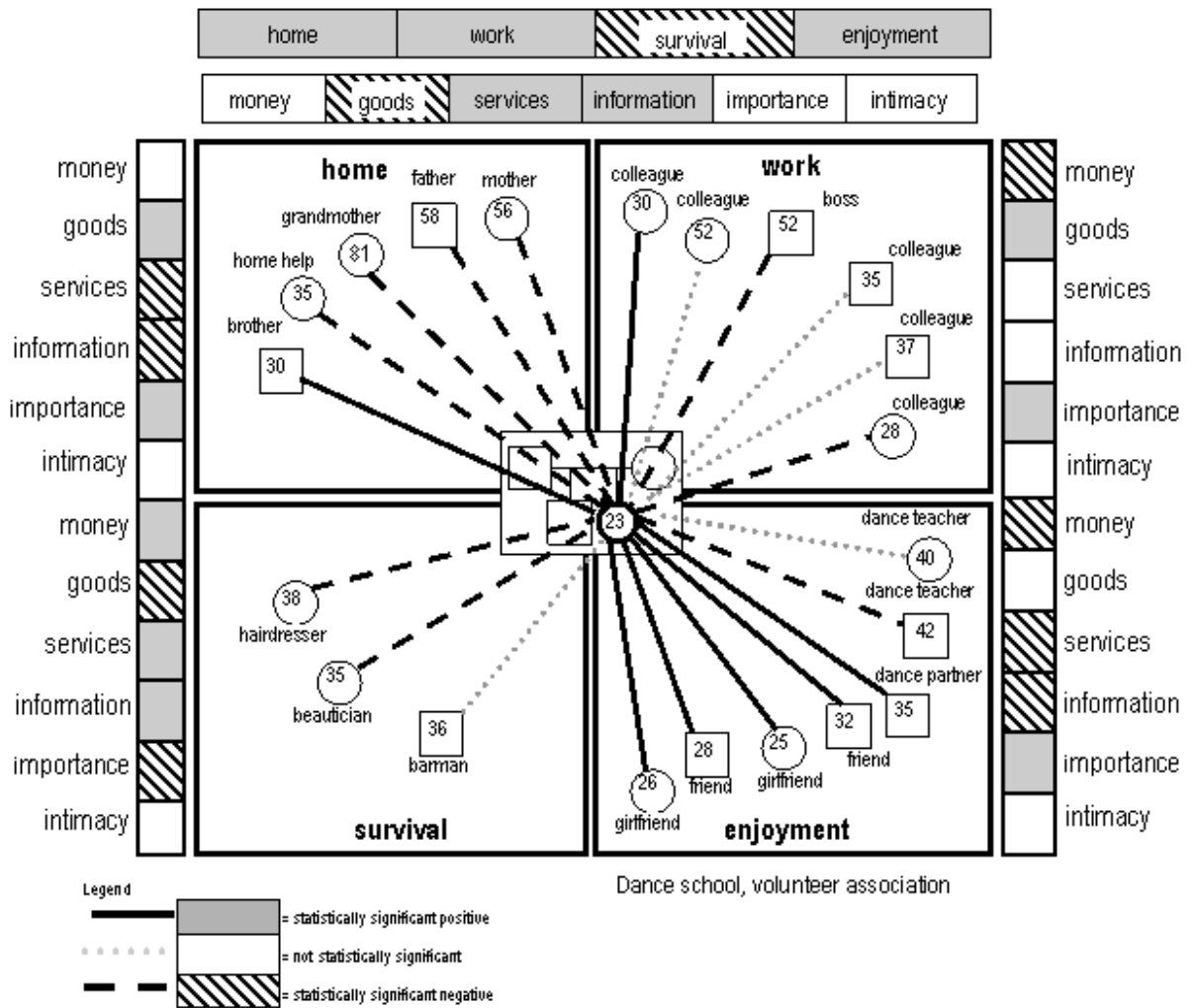
Here are presented four examples of the RC-Ecomap applications according to an idiographic approach, to show the flexibility and usefulness of this instrument. The first is the I-RC-Ecomap application to an individual and data was analyzed by crossing settings x persons x resources indexes. The second example focuses on a couple with cross-indexed analyses of participants x settings x relational modalities. The third example deals with a family where the analyses cross-index with settings x constructs of Power and Presence exchanged reciprocally or unilaterally.

The fourth is a clinical example of a family with a son that presents risk behaviors. The independent variables of participants have been changed in order not to allow their identification.

#### ***Example of Individual RC-Ecomap (I RC-Ecomap)***

This participant is a 23 year old woman who lives with her family in a small town of Northern Italy. She has completed an advanced bachelor degree and at present works in an information business. During her free time she is interested in dancing, music and reading, participating also in a volunteer association. The administration of the I RC-Ecomap took 26 minutes. Her answers were analyzed first according to settings x resources exchanged. Second, the person's exchanges were cross-indexed. Figure 4.1 shows her RC-Ecomap. From this figure, it is evident that the persons who are more frequently in contact with this participant relate to her enjoyment settings while the minor ones are of survival. Reciprocal relationships with positive statistical significance are included within enjoyment settings: A 26-year old woman friend ( $\hat{\mu} = 3.614, p = .0002$ ), a 28-year old male friend ( $\hat{\mu} = 3.614, p = .0002$ ), another 25-year old woman friend ( $\hat{\mu} = 3.176, p = .0007$ ), another 32-year old male friend ( $\hat{\mu} = 3.054, p = .0011$ ), and a dancing partner ( $\hat{\mu} = 1.881, p = .003$ ).

At home, this participant keeps relationships with a positive statistical significance with the brother ( $\hat{\mu} = 2.0460, p = .0204$ ), and at work with a colleague ( $\hat{\mu} = 2.0460, p = .0204$ ).



**Figure 4.1. I RC-Ecomap**

Statistically significant relationships perceived as less intense than others, were found with her mother ( $\hat{\mu} = -4.387, p = .0001$ ), father ( $\hat{\mu} = -6.872, p = .0001$ ), grandmother ( $\hat{\mu} = -2.613, p = .0045$ ), and caretaker ( $\hat{\mu} = -4.673, p = .0001$ ), at work with her boss ( $\hat{\mu} = -3.450, p = .0003$ ), in survival settings with her hairdresser ( $\hat{\mu} = -7.558, p = .0001$ ), and beauty operator ( $\hat{\mu} = -8.607, p = .0001$ ); and in enjoyment settings with her dance instructor ( $\hat{\mu} = -8.522, p = .0001$ ).

When evaluating settings statistically, positive significance was found for home ( $\hat{\mu} = 6.965, p = .0001$ ), work ( $\hat{\mu} = 3.167, p = .0001$ ) and enjoyment ( $\hat{\mu} = 13.276, p = .0001$ ) but negative for survival ( $\hat{\mu} = -8.562, p = .0001$ ). As far as resources are concerned, services ( $\hat{\mu} = 6.549, p = .0001$ ) and information ( $\hat{\mu} = 5.578, p = .0001$ ) are prevalent; goods or possessions receive very little attention by this participant ( $\hat{\mu} = -2.751, p = .0029$ ). Among

specific settings, at home reciprocal exchanges focus prevalently on goods ( $\hat{\mu}=3.207, p=.0007$ ) and importance ( $\hat{\mu}=1.758, p=.0204$ ), less services ( $\hat{\mu}=-5.673, p=.0001$ ) and information ( $\hat{\mu}=-5.846, p=.0001$ ); at work goods are significantly prevalent ( $\hat{\mu}=4.039, p=.0001$ ) as also importance ( $\hat{\mu}=2.106, p=.0176$ ) while money seems overlooked ( $\hat{\mu}=-7.411, p=.0001$ ); in survival settings of necessity of money is significantly prevalent ( $\hat{\mu}=6.623, p=.0001$ ), services ( $\hat{\mu}=4.070, p=.0001$ ) and information ( $\hat{\mu}=4.403, p=.0001$ ); less weight is given to possessions ( $\hat{\mu}=-3.085, p=.001$ ) and importance ( $\hat{\mu}=-2.381, p=.0086$ ). In enjoyment settings, emphasis is given to importance ( $\hat{\mu}=2.188, p=.0086$ ); less weight is given to money ( $\hat{\mu}=-3.667, p=.0001$ ), services ( $\hat{\mu}=-3.667, p=.0001$ ) and information ( $\hat{\mu}=-3.667, p=.0001$ ). From these results, it is possible to obtain a precise picture of contexts and priorities as lived by the participant during a specific stage of her life cycle. The family is by now just a launch pad for a more expanded stage in her life where work assumes a more important position than the family while she is now open to social relationships in her free time, divided into volunteer work and enjoyment in dancing. At this point in time, there is an acknowledgement of which settings may be preeminent over intimacy that may constitute a promise for the future. Information is restricted to specific areas, while attention is given to other resources. Apparently, this young woman is enjoying the pleasures of youth.

### ***Example of Couple RC-Ecomap (C RC-Ecomap)***

This couple has been married for 23 years. Both partners come from the same town where they still live. They are living in a building where one half is occupied by them and the other half occupied by the wife's parents. The husband is 45 years old, has completed middle school and works in a family business together with his parents and brothers. He is extraverted and warm with many friends and social contacts. The wife is 44 years old, has graduated at high school and is employed part-time in shoe factory. She appears gentle and spontaneous. Together with her husband they like skiing and meet with friends common to both partners. They have two daughters of 19 and 17 years. The oldest is at the first year of university and lives away during the week to come back home on week-ends. The second daughter, at the fourth year of a psycho-pedagogical high school, seems rather timid, talking very little and somewhat insecure. The overall family climate seems serene. Administration of

the RC-Ecomap required 15 minutes for the male and 17 for the female (Figure 4.2).

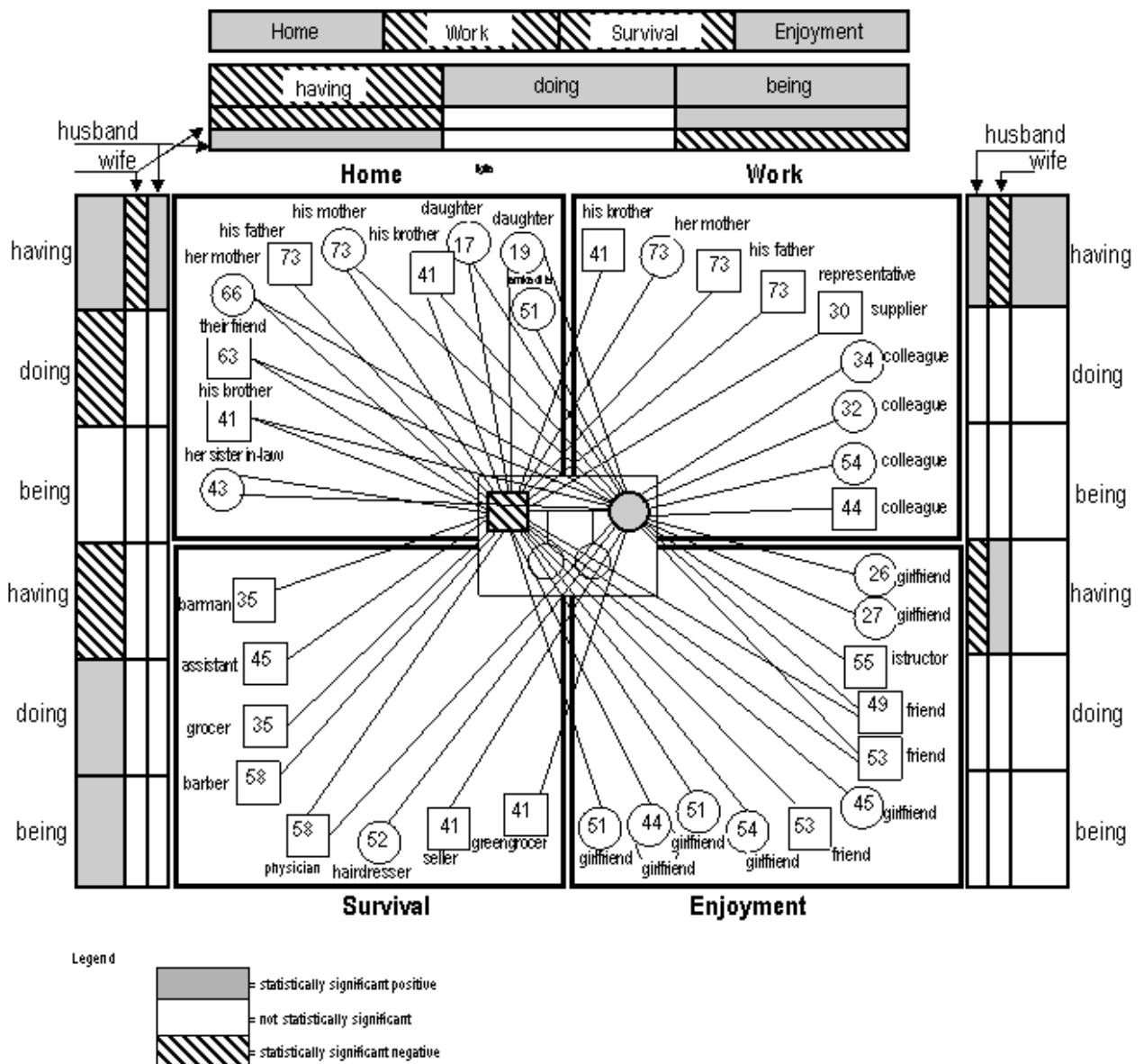


Figure 4.2 C RC-Ecomap

To comparing answers of two partners, it was decided to focus on the relationships between settings x exchange modalities (Figure 4.2). From Figure 4.2, it appears that both partners keep significant contacts with a great many people. The house is a witness of relationships of the expanded family of origin and friends. Both husband and wife named practically the same persons. She mentions his father and added a friend. In the work setting, relationships are completely different because the wife works outside the home and her husband in the family business: He also mentions his family members. In survival settings, both spouses share their physician, while he named people within his business. In enjoyment settings both record the same friends. She also mentions the gym instructor. Most of the exchanges occur at home ( $\hat{\mu} = 12.775, p = .0001$ ) and in enjoyment settings ( $\hat{\mu} = 8.614, p = .0001$ ); negative significance is attributed to survival ( $\hat{\mu} = -3.513, p = .0002$ ) and work settings ( $\hat{\mu} = -5.928, p = .0001$ ). Keeping in mind the family business, we can conclude that horizontal priorities are working well. Overall, relational exchanges for the husband seem inferior, both qualitatively and quantitatively ( $\hat{\mu} = -10.712, p = .0001$ ) to the wife's exchanges, suggesting that the contextual influence is lower for the husband than the wife. In the top part of the figure there are distinctions in exchange modalities. Being ( $\hat{\mu} = 3.002, p = .0013$ ) and Doing ( $\hat{\mu} = 1.904, p = .0013$ ) are more prevalent than Having ( $\hat{\mu} = -4.120, p = .0001$ ). Exchange modalities for the wife are different from those of the husband where Being is more prevalent in her than in him ( $\hat{\mu} = -1.607, p = .0540$ ), while Having is more important for him than for her ( $\hat{\mu} = -1.649, p = .0495$ ). There are no differences in Doing while relationships for both spouses are complementary. Differentiating exchange modalities x settings, we can see in Figure 4.2 that at home Having ( $\hat{\mu} = 1.953, p = .0254$ ) is decidedly more prevalent than Doing ( $\hat{\mu} = -2.678, p = .0037$ ) and Being, particularly for the husband ( $\hat{\mu} = 2.685, p = .0036$ ) but not for the wife. The same appears for Having at work in general ( $\hat{\mu} = 1.825, p = .0340$ ) and for the husband ( $\hat{\mu} = 5.869, p = .0001$ ). Attention should be given to the distinction between survival settings: Being first ( $\hat{\mu} = 2.569, p = .0198$ ) and then Doing ( $\hat{\mu} = 2.037, p = .0208$ ) over Having ( $\hat{\mu} = -2.516, p = .0059$ ) while there is no statistically significant distinction between the two partners. In enjoyment settings there are no significant distinctions among exchange

modalities except for the wife's attention to Having ( $\hat{\mu} = 3.926, p = .0001$ ), a modality that which seems of little interest to the husband. In conclusion, the RC-Ecomap of this couple highlights how somewhat traditional this couple is in following gender roles positively integrated and open to various contexts with overlap among various settings that do not show any difficulty in living for both partners.

### ***Example of Family RC-Ecomap (F RC-Ecomap)***

This family is composed by father, mother, and two boys with a Southern Italian background but has lived in North Italy for 20 years. Father is 47 year old and is an Italian Army officer, being rather introverted and not very expansive emotionally, even though he is very curious about people. Mother is 46 year old with a degree from elementary school working as a school assistant. She is simple and extraverted, kind and curious. The older son is 22 year old who dropped out of high school before obtaining a degree and has worked as a waiter for the last six years. Presently he is unemployed and spends most of his time prevalently at home, writing online and watching soccer games on television except for the evenings when he goes out with his friends. He is very expansive with his peers, with whom he does not like to spend too much time, preferring to spend most of his time at home. He resembles his father in some respects, even though more open. The second son is 17 year old and attends high school, is a member of a local soccer team and this sport is his passion, resembling in most ways his mother with whom he shared some kind of collusion. The relationship between father and mother seems good but somewhat cold, while the relationship between parents and sons are positive, especially between parents and the second son, while the rapport between brothers seems positive with an underlying sense of envy between the first and the second son. We seem to be dealing with a simple, traditional family without any problematic characteristics except for the unemployment and dependency of the older son. There are few contacts with others except for the neighbors in a condominium next door. With the extended family that still lives in Southern Italy, relationships are optimal but the frequency of contacts is limited to summer and Christmas holidays when the whole extended family when parents and children get together.

Administration of the Ecomap took 20 minutes for the younger son and 35 minutes for the mother. To evaluate their answers, it was decided to highlight the relationship between settings x relational orientation constructs (Presence and Power) as shown in Figure 4.3.

First, we can emphasize that home ( $\hat{\mu} = 1.992, p = .0232$ ) and work settings ( $\hat{\mu} = 1.818, p = .0345$ ) present the highest number of relational exchanges while survival is present to a lesser degree ( $\hat{\mu} = -4.233, p = .0001$ ). Comparing family members, the mother shows the lowest number of contacts ( $\hat{\mu} = -3.667, p = .0001$ ) while the younger son has the highest number ( $\hat{\mu} = 11.701, p = .0001$ ). Second, between settings and constructs (sharing of Presence and Power), in survival settings there is a much a significantly higher frequency of Power exchanges ( $\hat{\mu} = 1.736, p = .041$ ) and a smaller frequency of Presence ( $\hat{\mu} = -1.736, p = .041$ ). In other settings, there are no statistically significant differences in regard to Power.

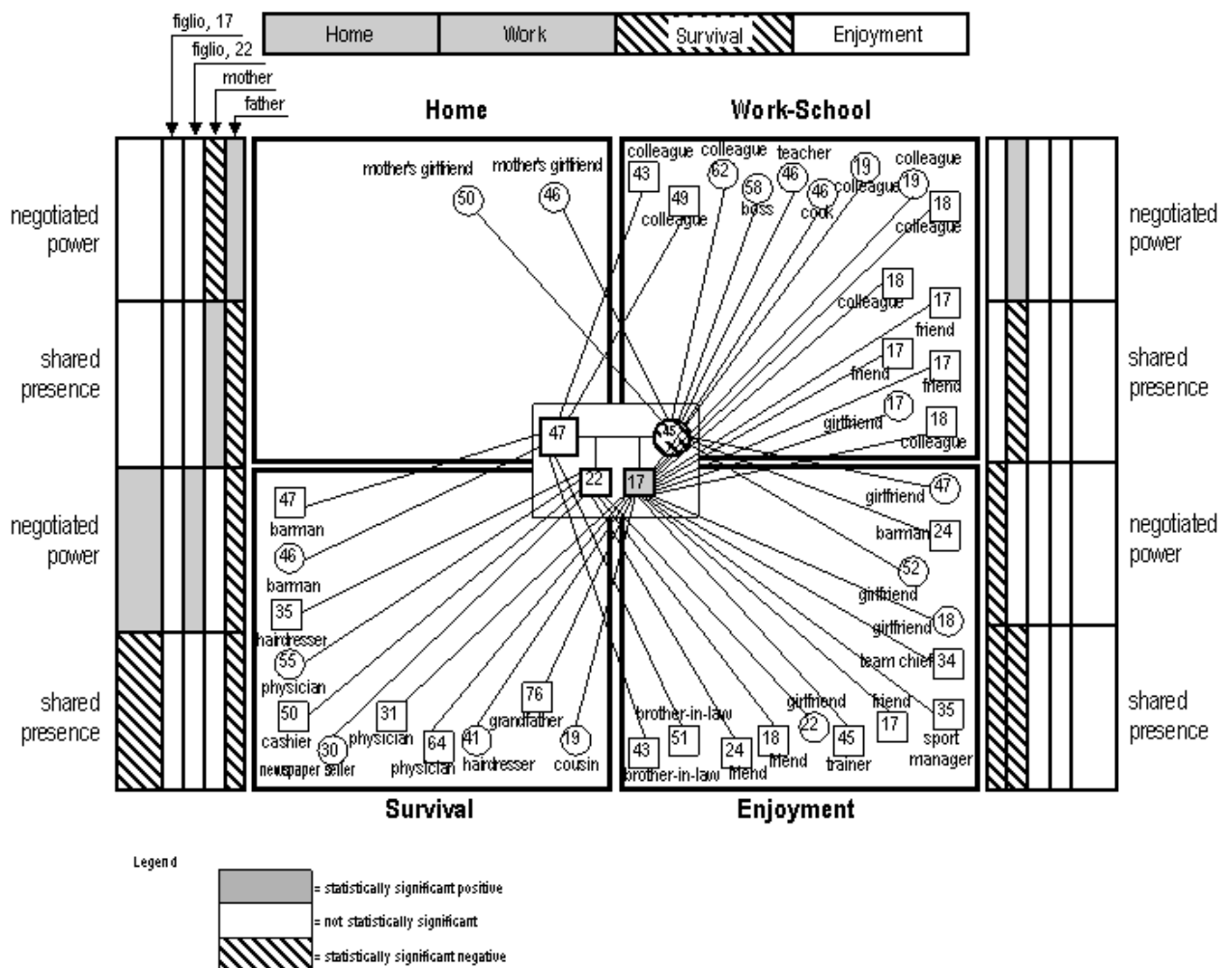


Figure 4.3 F RC-Ecomap

In regard to family relationships and the constructs of Power and Presence, at home the older son shows significantly a higher number of exchanges ( $\hat{\mu} = 3.121, p = .0009$ ), with a smaller number of mother/younger son exchanges ( $\hat{\mu} = -2.64, p = .0039$ ), ( $\hat{\mu} = -1.746, p = .0404$ ). Third, in cross-indexing settings x constructs x family members, results must be differentiated according to Power and to Presence. *Power*: At home, the father shows a significantly higher frequency of exchanges ( $\hat{\mu} = 4.982, p = .0001$ ) than the mother ( $\hat{\mu} = -3.734, p = .0001$ ), who, however, shows a higher frequency of exchanges at work ( $\hat{\mu} = 2.143, p = .0161$ ). *Presence*: The foregoing ratio between husband and wife reverts to an opposite direction at home between the father ( $\hat{\mu} = -4.982, p = .0001$ ) and the mother ( $\hat{\mu} = 3.734, p = .0001$ ). At work mother shows a lesser number of exchanges ( $\hat{\mu} = -2.143, p = .0161$ ). The father shows a low frequency of exchanges in survival ( $\hat{\mu} = -3.217, p = .0006$ ) and in enjoyment settings ( $\hat{\mu} = -2.694, p = .0035$ ).

In summary, this family, as viewed by the mother and younger son, seems to follow an order of Priorities: First exchanges within the family, second work and enjoyment with survival settings running third. The exuberance of the younger son seems to compensate for the limited number of exchanges with the mother. The father seems to express himself mainly in relation to survival and enjoyment settings, while the mother expresses herself mainly at work, with the younger son expressing himself at school and with friends. Power and Presence are pretty well balanced, with Power significantly and positively relevant to survival and negatively to enjoyment. The older son controls Power relationships more than those of Presence with the younger son showing a reverse pattern, similar to the mother.

### ***RC-Ecomap examples: Administration to a clinical family***

The Family turned to social services of Carmona, near Sevilla city, in the South-West of Spain, sent by child protection services, because his youngest son had carried out risk behaviours as: Alcohol abuses, consumption of hashish, deep relationship difficulties with parents, lack of functional communication with parents, and dropping out of high school. The family consists of five components: The youngest child, Francisco, is 16 y.o., is enrolled in high school that has stopped going for a month. His parents, Dolores, 43 y.o., is a housewife while Pablo, 44 y.o., is a white collar in the public service; his brother (José, 25 y.o) is currently unemployed and lives alone in a rented apartment supported by parents, while his

sister (Cynthia, 25 y.o.) is a clerk in a private company living with the origin family. José and Cynthia are twins.

The family was evaluated at the reception phase by Individual RC-Ecomap for each member, followed in subsequent meetings by individual, couple, and family interviews: Parents are overwhelmed by the lack of respect from Francisco and his difficulty to accept the proposed rules at home. In particular, a very difficult relationship emerges between Francisco and his father: A physical confrontation between the two is reported due to a lack of respect of Pablo toward his wife, visibly drunk come home. The psychologists observed, during the interviews, the father tends to evade the assessment, depressive attitudes of the mother, and Francisco establishing functional relationships with the team. The relational network of Francisco (Figure 4.4) is an extended network: He seems to possess functional relational competences.

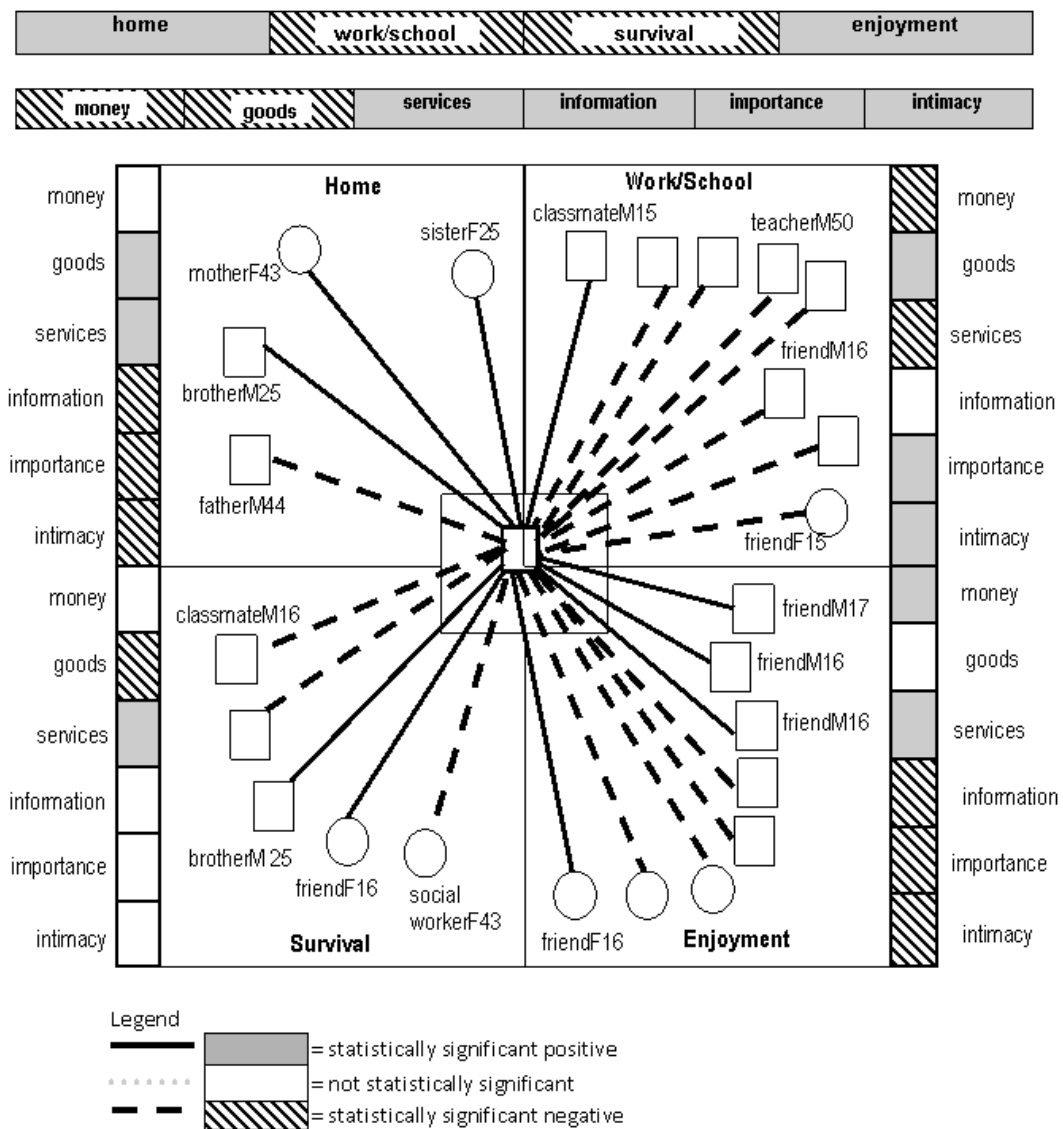


Figure 4.4. I RC-Ecomap of Francisco, 16 y.o. (patient)

He perceives higher levels of social support in Enjoyment ( $\hat{\mu} = 68.624, p = .0001$ ) and Home ( $\hat{\mu} = 22.686, p = .0001$ ) than in Survival ( $\hat{\mu} = -10.049, p = .0001$ ) and School ( $\hat{\mu} = -43.406, p = .0001$ ) settings, exchanging importance ( $\hat{\mu} = 14.141, p = .0001$ ), intimacy ( $\hat{\mu} = 6.460, p = .0001$ ), information ( $\hat{\mu} = 3.562, p = .0001$ ), and services ( $\hat{\mu} = 1.761, p = .0001$ ) than goods ( $\hat{\mu} = -7.748, p = .0001$ ) and money ( $\hat{\mu} = -12.532, p = .0001$ ) resources. Francisco perceives relationships with a friend ( $\hat{\mu} = 108.119, p = .0001$ ), the mother ( $\hat{\mu} = 55.998, p = .0001$ ), the sister ( $\hat{\mu} = 41.270, p = .0001$ ) and the brother ( $\hat{\mu} = 29.664, p = .0001$ ) as more supportive than father ( $\hat{\mu} = -3.594, p = .0001$ ), the social worker ( $\hat{\mu} = -6.743, p = .0001$ ), a particular teacher ( $\hat{\mu} = -8.254, p = .0001$ ), and other friends or schoolmates. The brother ( $\hat{\mu} = 34.244, p = .0001$ ) has a supportive role in survival setting too because accommodates Francisco when quarrels with his parents.

Looking at the RC-Ecomap of the father of Francisco it is immediately evident the poverty of the relational network in which Pablo is enclosed (Table 4.5): It represents a clue of reduced relational skills.

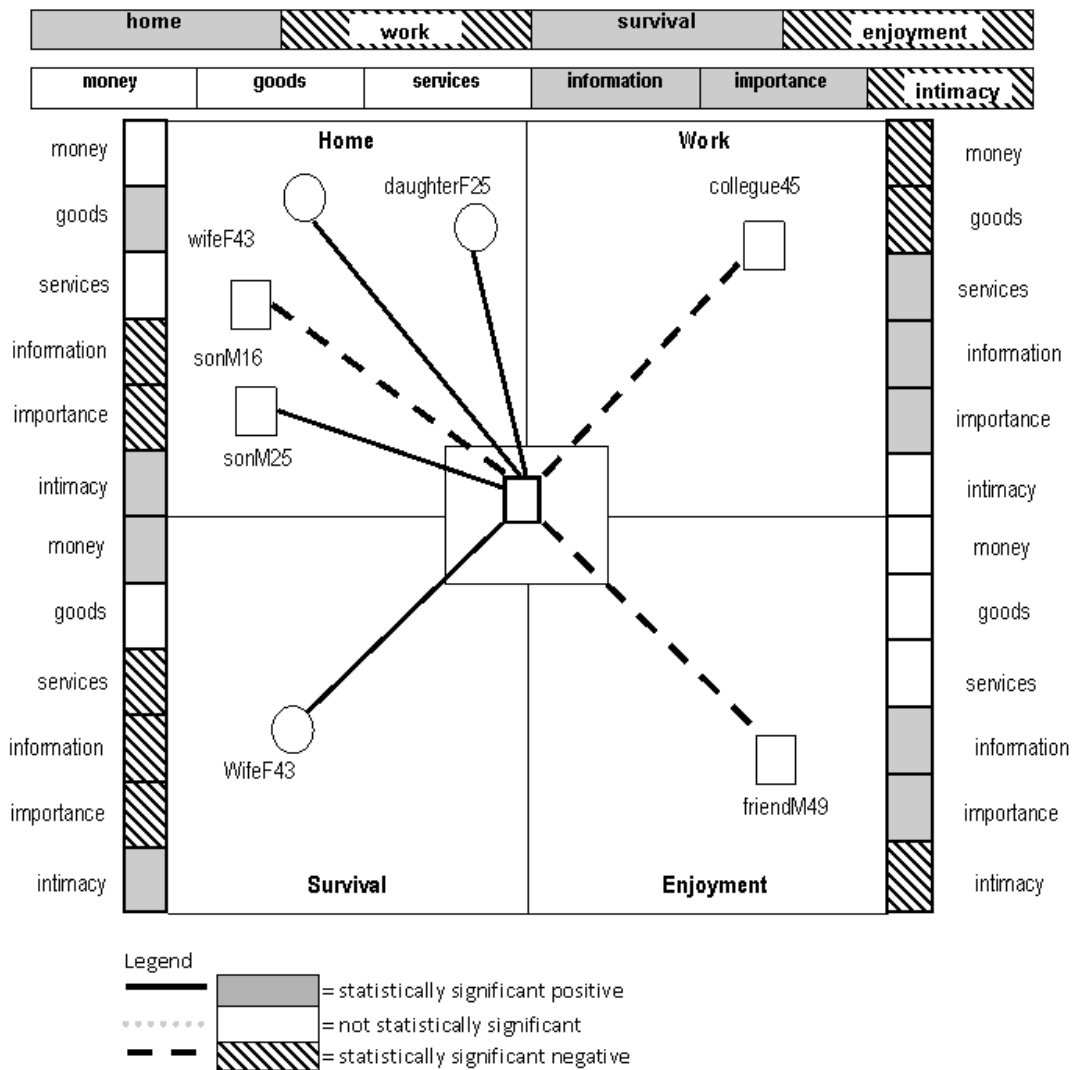


Figure 4.5. I RC-Ecomap of Pablo, 44 y.o. (father)

More supportive settings results Home ( $\hat{\mu} = 62.705, p = .0001$ ) and Survival ( $\hat{\mu} = 38.679, p = .0001$ ), exchanging mainly importance ( $\hat{\mu} = 5.371, p = .0001$ ) and information ( $\hat{\mu} = 4.859, p = .0001$ ) resources. The less exchanged is intimacy ( $\hat{\mu} = -5.881, p = .0001$ ). He builds extensive relationships over of all with his wife, in home ( $\hat{\mu} = 51.274, p = .0001$ ) and survival ( $\hat{\mu} = 54.701, p = .0001$ ) setting, with his older son ( $\hat{\mu} = 14.014, p = .0001$ ), and the daughter ( $\hat{\mu} = 3.451, p = .0003$ ). He has built a relationship of lower intensity with Francisco, than with his family of relationship, than family, is established with Francisco ( $\hat{\mu} = -21.931, p = .0003$ ).

Individual RC-Ecomap (Figure 4.6) of the mother shows the peculiarity of her social network: It's only limited to family members, in survival ( $\hat{\mu} = 25.013, p = .0001$ ) and home settings ( $\hat{\mu} = 6.499, p = .0001$ ).

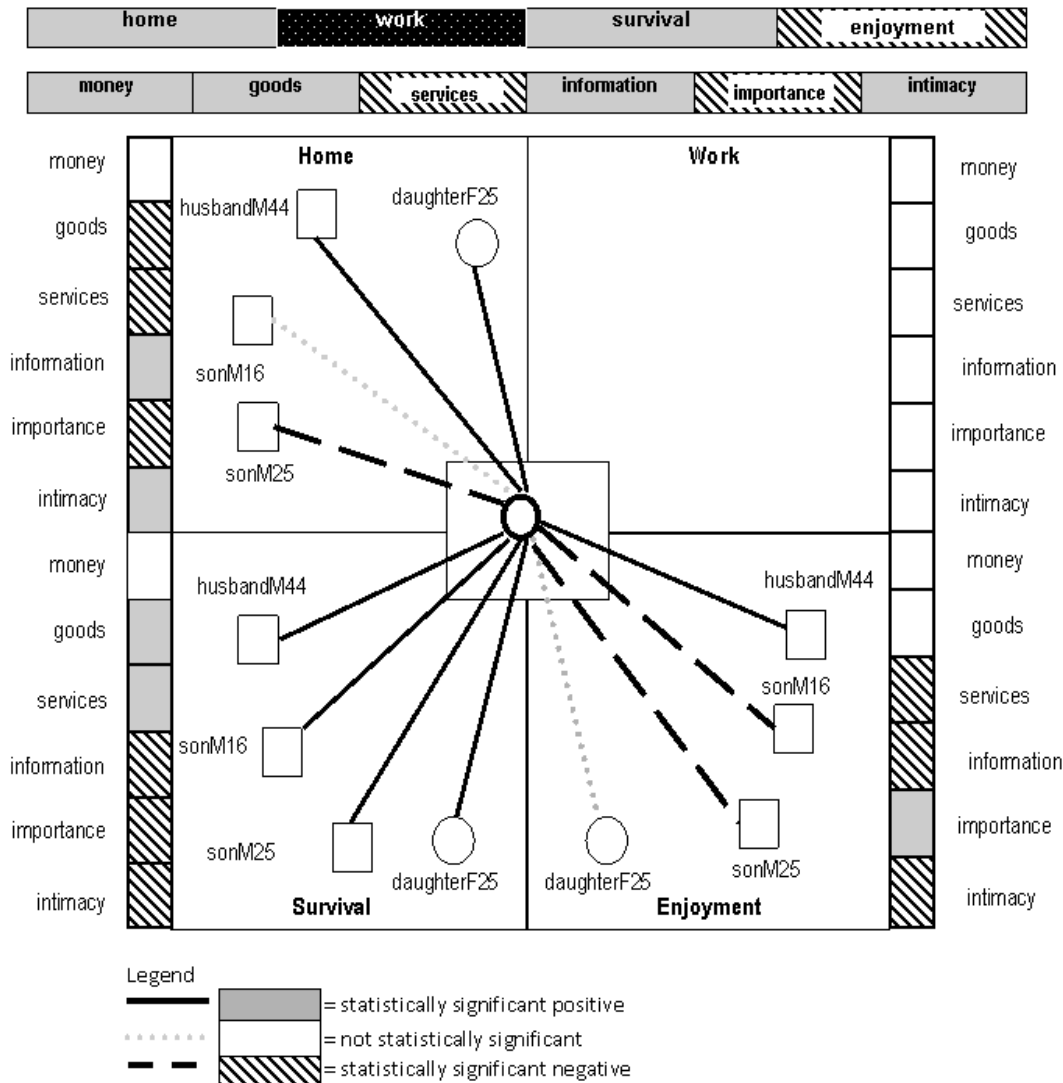


Figure 4.6. I RC-Ecomap of Dolores, 43 y.o. (mother)

She doesn't work and has not significant relationships outside the family. She establishes relationships with all component in survival settings (husband:  $\hat{\mu} = 36.660, p = .0001$ ; daughter:  $\hat{\mu} = 26.476, p = .0001$ ; José:  $\hat{\mu} = 3.334, p = .0004$ ; and Francisco  $\hat{\mu} = 3.334, p = .0004$ ) with the husband ( $\hat{\mu} = 11.222, p = .0001$ ) and daughter ( $\hat{\mu} = 26.056, p = .0001$ ) in home setting, and with husband ( $\hat{\mu} = 29.923, p = .0001$ ) in enjoyment setting. Reduced the construction of relationship with Francisco in home ( $\hat{\mu} = 0.543, p = .2936$ ) and enjoyment ( $\hat{\mu} = -25.844, p = .0001$ ) settings.

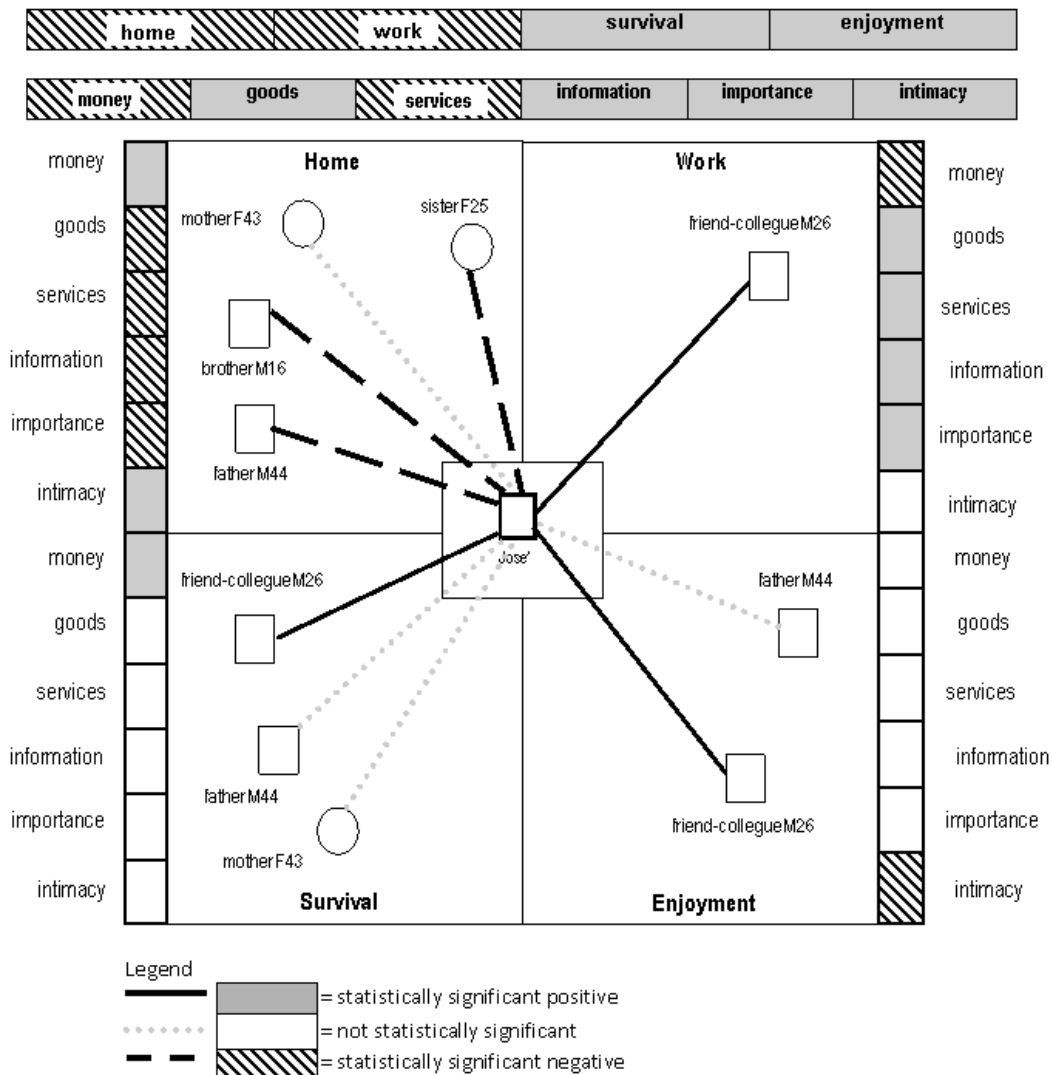
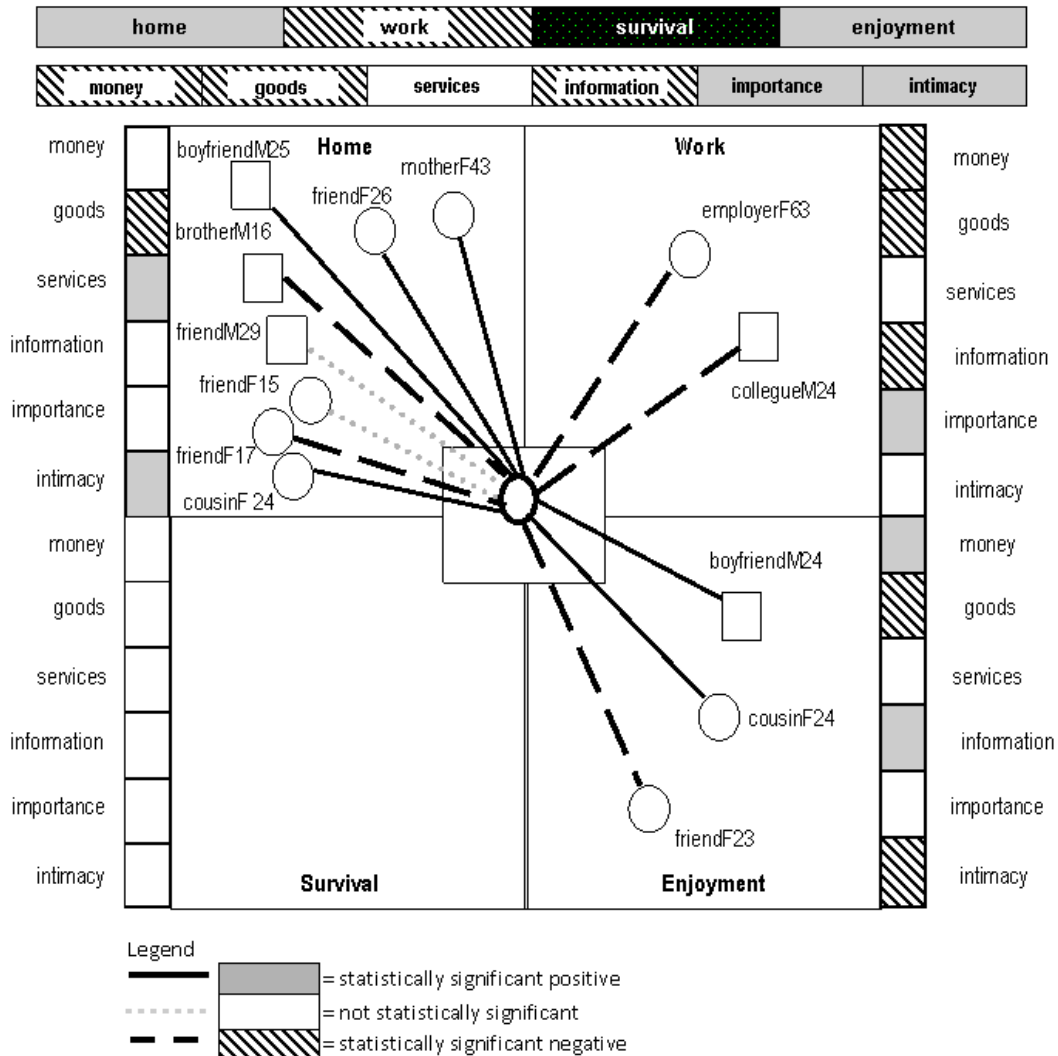


Figure 4.7. I RC-Ecomap of José, 25 y.o. (brother)

In social network of José, the brother of Francisco, (Figure 4.7) emerges an intense relationship with a friend-colleague, as old as him, in enjoyment ( $\hat{\mu} = 40.744, p = .0001$ ), survival ( $\hat{\mu} = 40.744, p = .0001$ ), and work ( $\hat{\mu} = 40.744, p = .0001$ ) settings which indexes are greater than values of relationships with his family members in home (mother:  $\hat{\mu} = 0.802, p = .2112$ ; father:  $\hat{\mu} = -3.557, p = .0002$ ; sister:  $\hat{\mu} = -22.481, p = .0001$ ; Francisco:  $\hat{\mu} = -24.508, p = .0001$ ), survival (father  $\hat{\mu} = -0.8970, p = .0001$ ; mother ( $\hat{\mu} = 1.485, p = .0687$ ) and enjoyment (father  $\hat{\mu} = -2.087, p = .0001$ ) settings.



**Figure 4.8. I RC-Ecomap of Cinthya, 25 y.o. (sister)**

Among intimates of Cinthya (Figure 4.8), the sister of Francisco, assumes a relevant position the figure of the boyfriend in home ( $\hat{\mu} = 39.097, p = .0001$ ) and enjoyment ( $\hat{\mu} = 25.033, p = .0687$ ) settings, and of the mother in home setting ( $\hat{\mu} = 30.990, p = .0001$ ). The aspect more relevant of her RC-Ecomap is the referred lack of significant relationship with the father and the twin brother while many persons crowded the home settings.

RC-Ecomap of family members confirms problematic relationships between Francisco and his family members. Francisco presents an extended social network: It's a functional condition according an interactionist point of view. The poorness of parental relational competence and incongruence between father and daughter RC-Ecomap suggest domestic violence conditions. Clinicians hypothesized that problematic behaviors of Francisco reflect most serious family problems: They decided to work for enhancing functional relationships of Francisco social network and facing family problems.

In the examples, RC-Ecomap, the new ecological map, continues to remain mainly an instrument of qualitative character. The benefits of idiographic analyses obtained through Log-linear transformation of weighted scores, permits to reach statistical significance for the values of resulting parameters. It proves to be a versatile and useful tool for clinical use. The presented case studies, evaluated by RC-Ecomap, represent weak evidences of validity, the so called “face validity”: Results are congruent with clinical observations. The instrument needs more consistent validity evidences.

## CHAPTER 5

### RC-Ecomap for research: The nomothetic approach

A nomothetic use of RC-Ecomap may allow both to test the psychometric properties of the instrument and to show its use in research field. So I decided to conduct two research studies with non clinical participants, in Italian and Spanish culture, to verify reliability, internal validity, predictive, and concurrent validity of the instrument. Three further researches were conducted on clinical subjects (alcoholics under treatment, parents of psychotics, and subject with high and low scores to a Narcissism scale) compared with non clinical, to test differential validity and RC-Ecomap group peculiarities.

#### ***Study 1: RC-Ecomap administered to a non-clinical Italian sample to verify psychometric properties, reliability, internal validity, and concurrent validity***

The aim of this research is to verify psychometric characteristics, internal validity, and concurrent validity of RC-Ecomap - Italian version. The participants were selected and balanced so as to allow comparisons of ecological maps between males and females, and in different age classes.

##### *Participants*

To carry out the research was decided to select participant from 15 to 36 years old, balancing age and gender variables: Twenty subjects for each age level (15-1; 20-21; 25-26; 30-31; 35-36 ), ten males and ten females, for a total of 50 males and 50 females. It was hypothesized that participant 15 years old were still living with origin family, while 36 years old were living out of the origin family. All participants was living in Veneto (North –East of Italy), in the provinces of Treviso and Padua. Singles were 48% of participants (25 males and 23 females), 32 % engaged (19 males and 13 females), and 20% married or cohabiting (6 males and 13 females). In the sample, 24 % of participants had an elementary level of education, 9 % a professional level, 37% a high school diploma, and 33 % a college degree.

##### *Instruments*

In the research, together Individual RC-Ecomap were administered the following instrument to test concurrent validity of the instrument under investigation:

1. The Chabot Emotional Differentiation Scale, CEDS, an intra-psychoic evaluation of emotional differentiation (Chabot & Licht, 2006), based on Bowen's theory (1978): The attitude to respond emotionally or rationally to relational stimuli. The scale reliability was verified in different studies: .72 (Takagishi, 1996), .80 (Takagishi, 1999), .79 (Karasick, 2004), .81 (Reynolds e Chabot, 2004). The Italian version of Cusinato and Colesso (Corazza, 2010) registered  $\alpha = .81$ .

2. The Fear of Intimacy Scale, IAS, that evaluates the fear to enter into intimacy with the partner (Descutner e Thelen, 1991; Doi e Thelen, 1993). Authors reported reliability of .93 (Descutner e Thelen, 1991), while an Italian version registered  $\alpha = .83$  (Cusinato & Colesso, 2007).

3. The Anxiety about Transition (Scale, AaTS) measures anxiety feelings experienced in the relations with others. Manzi, Vignoles, Regalia, and Scabini (2006) found satisfactory reliability with Italian ( $\alpha = .85$ ) and English ( $\alpha = .83$ ) participants.

4. The Relational Awareness Scale (RAwS) (Colesso & Cusinato, 2011; L'Abate, Cusinato, Maino, Colesso, & Scilletta, 2010) measures the individual ability to focus attention on own emotionality, rationality and contextual requests when in relation with others. A recent administration to 245 Italian participants confirmed a satisfactory reliability ( $\alpha = .72$ ) (Cusinato & Colesso, 2007).

5. The Center for Epidemiologic Studies Depression Scale (Radloff, 1977), (CES-D Scale) measures depressive symptoms that an individual experienced in the last week. The author reports a scale reliability  $\alpha = .72$  with non clinical participants and .90 with clinical subjects.

6. Satisfaction with Life Scale (SLC) measures the overall satisfaction on the results achieved in the course of his/her life (Diener, Emmous, Larse, & Griffin, 1985). The scale reliability was verify within English ( $\alpha = .80$ ) and Italian ( $\alpha = .83$ ) subjects (Manzi, Vignoles, Regalia, & Scabini; 2006).

7. The Rosenberg Self-Esteem Scale (RSE, Rosenberg, 1965) measures self-esteem satisfaction and acceptance for the Self. Literature reports reliability of .73 (Hagborg, 1993) and .80 (Shahani, Dipoye, & Phillips, 1990).

8. The Multidimensional Scale of Perceived Social Support (MSPSS, Zimet, Dahlen, Zimet, & Farley (1988) measures individual perceived social support at global, family, friends, and significant other levels. The instrument is composed by 12 items, 4 for each subscale. Authors reported reliability of .88 for global scale, .91 for "significant other" subscale, .87 for "family" subscale, and .85 for "friends" subscale.

### *Procedure*

Subjects were recruited in meeting places typical of relevant age groups (bars, shops, scout groups, gyms, etc.). Each person was granted anonymity in accordance with the applicable Italian privacy law (D. Lgs. 196/2003) and is provided for the delivery and signing of informed consent in the case of underage subjects, the informed consent sheet was previously delivered and made to sign with their parents. Each interview took on average about 15-20 minutes, with considerable variation in subjective (range: from 10 to 40 minutes).

### *Analyses*

In order to verify psychometrical properties, reliability, and validity of new RC-Ecomap measures, was calculated: Descriptive analysis on RC-Ecomap indexes (average, standard deviation, kurtosis, and skewness); Cronbach's Alpha within setting, context, and resources indexes to test reliability of the measures; Spearman's Rho correlation among RC-Ecomap setting and context indexes to verify internal validity; and Spearman correlation between RC-Ecomap indexes and concurrent measures (after checking their psychometrical properties and linear relations between couple of variables) were run to verify concurrent validity of the tool. Comparisons of RC-Ecomaps in different age groups and between male and female groups were elaborated by non-parametric statistics (Mann-Whitney's *U* and Kruskal Wallis's *H* tests).

### *Results*

In Table 5.1.1 descriptive characteristics of RC-Ecomap indexes are reported. As we can see, even if RC-Ecomap indexes are categorical data, most have a bell shape distribution, having skewness and kurtosis between about +1 and -1 (Barbaranelli, 2007): Processing data by parametrical analysis may be justified. However, I decided to use non parametric statistics for both the nature of the weighted scores and precaution. In Table 5.1.2 and 5.1.3 are reported reliability analysis for each RC-Ecomap. For each RC-Ecomap index, I applied Cronbach's Alpha statistic to the evaluated indexes for each intimate that participants reported and which sum are the indexes. These alpha evaluations give us information: The reliability of each index; the homogeneity of evaluations within each index. Results tell us that reliability of setting and context indexes are satisfactory ( $\alpha > .70$ ) and/or acceptable ( $\alpha > .60$ ) as contents of exchanged resources within Work and Enjoyment setting. Reliability of exchanged resources indexes in general and within Home and Survival setting are not satisfactory ( $\alpha < .60$ ).

Reliability evaluations confirm an acceptable general reliability of the instrument, evidencing its congruence with the theoretical construct: Perceived relational contacts and support within each setting and context are homogeneous; There is not homogeneity in exchanged resources indexes that are calculated between the different settings, except the importance resource ( $\alpha = .60$ ); there is homogeneity in all exchanged resources within Work and Enjoyment settings and in some exchanged resources within Home and Survival settings.

**Table 5.1. 1. Descriptive characteristics of RC-Ecomap indexes (N = 100).**

RC-Ecomap Indexes			<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Settings	Home	SIh	6,74	4,27	0,98	0,19
	Work	SIw	15,21	7,78	1,18	3,00
	Survival	Sis	14.78	6.45	0.60	0.34
	Enjoyment	Sle	15,05	8,16	1,13	1,45
Contexts	Home	CIh	61.56	29.23	0.94	1.06
	Work	CIw	59.16	38.02	1.66	3.32
	Survival	CIs	25.73	18.48	1.21	0.77
	Enjoyment	Cle	67.27	38.63	1.39	3.88
Resources	money	IRm	153.40	102.82	0.83	0.06
	goods	IRg	220.30	137.54	1.73	5.15
	services	IRs	288.33	143.67	0.56	0.35
	information	IRif	348.28	157.75	1.45	4.23
	importance	IRim	358.14	172.81	2.23	11.03
	intimacy	IRin	257.68	145.38	0.73	-0.01
Home * money	Hm	60.94	44.40	1.40	2.98	
Home * goods	Hg	77.32	45.07	1.01	1.60	
Home * services	Hs	78.78	51.24	1.46	3.29	
Home * information	Hif	91.08	53.21	1.24	2.23	
Home * importance	Him	109.71	60.92	0.70	0.84	
Home * intimacy	Hin	81.06	55.78	1.11	1.53	
Work * money	Wm	21.70	30.48	1.70	3.30	
Work * goods	Wg	46.85	60.01	1.85	3.78	
Work * services	Ws	85.31	71.10	1.45	2.84	
Work * information	Wif	102.71	73.38	1.77	4.18	
Work * importance	Wim	96.45	74.38	1.53	3.05	
Work * intimacy	Win	59.00	56.72	1.01	0.58	
Survival * money	Sm	30.32	28.97	1.46	2.28	
Survival * goods	Sg	28.02	29.48	1.75	3.20	
Survival * services	Ss	32.66	30.94	1.41	1.84	
Survival * information	Sif	37.04	32.61	1.19	0.79	
Survival * importance	Sim	29.98	32.59	1.58	2.56	
Survival * intimacy	Sin	18.01	27.26	1.91	3.32	
Enjoyment * money	Em	40.44	52.36	1.70	2.91	
Enjoyment * goods	Eg	68.11	67.45	1.57	3.74	
Enjoyment * services	Es	91.58	72.48	0.68	-0.40	
Enjoyment * information	Eif	117.45	80.30	1.46	4.09	
Enjoyment * importance	Eim	122.00	78.05	1.45	4.34	
Enjoyment * intimacy	Ein	99.61	77.45	0.88	0.67	

**Table 5.1.2. RC-Ecomap reliability: Setting, Context, and Resources Indexes (N = 100).**

	RC-Ecomap Indexes		Cronbach's Alpha	n item
Settings	Home	SIh	<b>.72</b>	10*
	Work	SIw	<b>.82</b>	10*
	Survival	SIs	<b>.65</b>	6*
	Enjoyment	Sle	<b>.80</b>	10*
Contexts	Home	CIh	<b>.69</b>	10*
	Work	CIw	<b>.83</b>	10*
	Survival	CIs	<b>.65</b>	6*
	Enjoyment	Cle	<b>.81</b>	10*
Resources	Money	RIm	.52	4**
	Goods	Rlg	.54	4**
	Services	RIs	.44	4**
	Information	RIif	.49	4**
	Importance	Rlim	<b>.60</b>	4**
	Intimacy	Rlin	.51	4**

\*Individual indexes of the significant persons reported. \*\*Resource Indexes in the four settings.

**Table 5.1.3. RC-Ecomap reliability: Setting \* Resources Indexes (N = 100).**

RC-Ecomap Indexes			Cronbach's Alpha	n item**	
Home	*	money	Hm	.54	8
Home	*	goods	Hg	.53	8
Home	*	services	Hs	.58	8
Home	*	information	Hif	<b>.63</b>	8
Home	*	importance	Him	<b>.69</b>	8
Home	*	intimacy	Hin	<b>.63</b>	8
Work	*	money	Wm	.53	8
Work	*	goods	Wg	<b>.79</b>	8
Work	*	services	Ws	<b>.78</b>	8
Work	*	information	Wif	<b>.79</b>	8
Work	*	importance	Wim	<b>.81</b>	8
Work	*	intimacy	Win	<b>.68</b>	8
Survival	*	money	Sm	.53	5
Survival	*	goods	Sg	.53	5
Survival	*	services	Ss	.56	5
Survival	*	information	Sif	<b>.64</b>	5
Survival	*	importance	Sim	<b>.66</b>	5
Survival	*	intimacy	Sin	.58	5
Enjoyment	*	money	Em	<b>.73</b>	8
Enjoyment	*	goods	Eg	<b>.77</b>	8
Enjoyment	*	services	Es	<b>.80</b>	7
Enjoyment	*	information	Eif	<b>.81</b>	8
Enjoyment	*	importance	Eim	<b>.79</b>	8
Enjoyment	*	intimacy	Ein	<b>.76</b>	8

\*\*Resources exchanged with each reported significant person in each setting

According to the Relational Competence Theory (L'Abate, 1995, 2000, 2005), the relational competences are built within each setting and may be different between the different settings. Otherwise, in Enjoyment and Work setting people act a single role – usually respectively friend and worker – while have multiple roles in Home (usually husband/wife, father/mother, and or son/daughter, ...) and Survival (client, patient, traveler, ...) settings. These aspects justify different levels of reliability in RC-Ecomap indexes.



**Table 5.1.5. Psychometric characteristics of concurrent instruments (N = 100).**

Scale	M	SD	Skewness	Kurtosis	Cronbach's Alpha	n item
CEDS	57.59	8.88	0.21	-0.01	.79	17
IAS	36.64	8.93	0.29	-0.72	.80	15
RAwS	38.34	4.50	-0.70	1.22	.74	9
AaTS	13.04	3.69	0.26	-0.52	.80	6
CES-D	40.06	12.27	1.23	1.84	.88	20
SLC	17.58	4.10	-0.34	-0.32	.80	5
RSE	81.84	15.54	-0.55	-0.18	.86	10
MSPSS	59.61	6.92	-0.49	-0.62	.81	12
global						
MSPSS	19.05	4.15	-1.56	3.47	.89	4
family						
MSPSS	19.33	3.06	-0.73	0.23	.84	4
friend						
MSPSS	21.23	2.92	-1.19	1.32	.84	4
person						

**CEDS** Chabot Emotional Differentiation Scale; **IAS** = The Fear of Intimacy Scale; **RAwS** = The Relational Awareness Scale; **AaTS** = Anxiety about Transition Scale; **CES-D** = The Center for Epidemiologic Studies Depression Scale; **SLC** = Satisfaction with Life Scale; **RSE** = Rosenberg Self-Esteem Scale; **MSPSS** = Multidimensional Scale of Perceived Social Support (Global score; Significant Person, Family, and Friend subscales).

**Table 5.1.6. RC-Ecomap concurrent validity: Spearman's Rho correlations between RC-Ecomap Setting, Context, and Resources Indexes and Concurrent measures (N = 100).**

	CEDS	IAS	RAwS	AaT	CES-D	SLC	MSPSS				RSE
							globa l	perso n	famil y	friend	
Slh											
Slw											
Slc									.24*		
Sle											
Clh		-.20*	.26*			.26**				.28**	
Clw					-.22*	.23*	.23*				.27**
Clc					-.20*		.26**			.27**	
Cle							.24*				.45**
IRm	.25*	-.20*	.21*				.34**		.27**	.25*	.22*
RIg		-.24*					.35**			.27**	.28**
RIc	.25*	-.27**	.25*	-.20*	-.20*	.26**	.34**	.23*		.29**	.28**
RIif		-.20*	.23*		-.22*	.30**	.34**			.36**	.25*
RIlim	.21*	-.22*	.24*		-.28**	.37**	.43**		.30**	.35**	.24*
Rlin		-.35*									
		*	.36**	-.24*	-.27**	.39**	.47**	.31**	.25*	.44**	.29**

\* $p < .05$ ; \*\* $p < .01$ . Effect Size: .10 small; .30 **medium**; .50 **large** (Cohen, 1988).

**CEDS** = Chabot Emotional Differentiation Scale; **IAS** = The Fear of Intimacy Scale; **RAwS** = The Relational Awareness Scale; **AaTS** = Anxiety about Transition Scale; **CES-D** = The Center for Epidemiologic Studies Depression Scale; **SLC** = Satisfaction with Life Scale; **RSE** = Rosenberg Self-Esteem Scale; **MSPSS** = Multidimensional Scale of Perceived Social Support (Global score; Significant Person, Family, and Friend subscales).

The fear of intimacy is negatively related to: The perceived relational support in Home context (IAS-Clh:  $r = -.20, p < .05$ ); all the exchanged resources in relationships (IAS-RIc:  $r = -.21, p < .05$ ; IAS-RIg:  $r = -.24, p < .05$ ; IAS-RIc:  $r = -.27, p < .01$ ; IAS-RIif:  $r = -.20, p < .$

05; IAS-RIim:  $r = -.22$ ,  $p < .05$ ; IAS-RIin:  $r = -.35$ ,  $p < .01$ ). We find negative relations of exchanged intimacy resource in Home (IAS-Hin:  $r = -.20$ ,  $p < .05$ ), Survival (IAS-Sin:  $r = -.34$ ,  $p < .01$ ), and Enjoyment (IAS-Ein:  $r = -.27$ ,  $p < .01$ ) contexts.

Depressive symptoms seem related to seclusion in Work (CES-D/CIw:  $r = -.22$ ,  $p < .05$ ) and Survival (CES-D/CI:  $r = -.20$ ,  $p < .05$ ) contexts, to reduced exchanged services (CES-D/RI:  $r = -.20$ ,  $p < .05$ ), information (CES-D/RIif:  $r = -.22$ ,  $p < .05$ ), importance (CES-D/RIim:  $r = -.28$ ,  $p < .01$ ) and intimacy (CES-D/RIin:  $r = -.27$ ,  $p < .01$ ) resources in relationships, other than, in other, reduced exchanged services, importance and intimacy within Home (CES-D/Hs:  $r = -.22$ ,  $p < .05$ ; CES-D/Him:  $r = -.23$ ,  $p < .05$ ; CES-D/Hin:  $r = -.26$ ,  $p < .01$ ) and Work (CES-D/Ws:  $r = -.20$ ,  $p < .05$ ; CES-D/Wim:  $r = -.26$ ,  $p < .01$ ; CES-D/Win:  $r = -.21$ ,  $p < .05$ ) settings.

Satisfaction with life is positively related with perceived relational context of Home (SLC-CIh:  $r = .26$ ,  $p < .01$ ) and Work (SLC-CIw:  $r = .23$ ,  $p < .05$ ) settings, with exchanged services (SCL-RI:  $r = .26$ ,  $p < .01$ ), information (SCL-RIif:  $r = .30$ ,  $p < .01$ ), importance (SCL-RIim:  $r = .37$ ,  $p < .01$ ), and intimacy (SCL-RIin:  $r = .39$ ,  $p < .01$ ) relational resources in general and within Home (SLC-Hs:  $r = .23$ ,  $p < .05$ ; SLC-Him:  $r = .30$ ,  $p < .01$ ; SLC-Hin:  $r = .40$ ,  $p < .01$ ), Work settings (SLC-Wif:  $r = .26$ ,  $p < .05$ ; SLC-Wim:  $r = .24$ ,  $p < .05$ ; SLC-Win:  $r = .25$ ,  $p < .05$ ) and Survival (SLC-Sif:  $r = .21$ ,  $p < .05$ ; SLC-Sim:  $r = .38$ ,  $p < .01$ ; SLC-Sin:  $r = .26$ ,  $p < .01$ ) settings.

Self esteem is positively related to all exchanged resources (RSE-RIim:  $r = .22$ ,  $p < .05$ ; RSE-RIg:  $r = .28$ ,  $p < .01$ ; RSE-RI:  $r = .28$ ,  $p < .01$ ; RSE-RIif:  $r = .25$ ,  $p < .05$ ; RSE-Rim:  $r = .24$ ,  $p < .05$ ; RSE-Rin:  $r = .29$ ,  $p < .01$ ).

The most interesting concurrent tool is a direct measure of social support: The Multidimensional Scale of Perceived Social Support (MSPSS) and Significant Person (MSPSS-person), Family (MSPSS-family), and Friend (MSPSS-friend) subscales.

Global MSPSS is positively related with Work context index (MSPSS-CIw:  $r = .23$ ,  $p < .05$ ), Survival context index (MSPSS-CI:  $r = .26$ ,  $p < .01$ ), Enjoyment context index (MSPSS-CIe:  $r = .24$ ,  $p < .05$ ), all relational global resources (MSPSS-RIim:  $r = .34$ ,  $p < .01$ ; MSPSS-RIg:  $r = .35$ ,  $p < .01$ ; MSPSS-RI:  $r = .34$ ,  $p < .01$ ; MSPSS-RIif:  $r = .34$ ,  $p < .01$ ; MSPSS-RIim:  $r = .43$ ,  $p < .01$ ; MSPSS-RIin:  $r = .47$ ,  $p < .01$ ), and exchanged resources indexes in Home (MSPSS-Hm:  $r = .37$ ,  $p < .01$ ; MSPSS-Hg:  $r = .31$ ,  $p < .01$ ; MSPSS-Hif:  $r = .24$ ,  $p < .05$ ; MSPSS-Him:  $r = .36$ ,  $p < .01$ ; MSPSS-Hin:  $r = .46$ ,  $p < .01$ ), Survival (MSPSS-Ss:  $r = .23$ ,  $p < .05$ ; MSPSS-Sif:  $r = .34$ ,  $p < .01$ ; MSPSS-Sim:  $r = .27$ ,  $p < .01$ ; MSPSS-Sin:

$r = .24, p < .05$ ), and Enjoyment (MSPSS-Eg:  $r = .26, p < .01$ ; MSPSS-Es:  $r = .29, p < .01$ ; MSPSS-Eim:  $r = .26, p < .01$ ; MSPSS-Ein:  $r = .27, p < .01$ ) settings.

**Table 5.1.7. RC-Ecomap concurrent validity: Spearman's Rho correlations between RC-Ecomap Setting \* Resources Indexes and Concurrent measures (N = 100).**

Index	CEDS	IAS	RAwS	AaT	CES-D	SLC	MSPSS				RSE
							globa l	perso n	famil y	friend	
Hm	.20*		.22*		-.23*		<b>.37**</b>		<b>.41**</b>		
Hg						.25*	<b>.31**</b>		<b>.42**</b>		
Hs		-.26**	.25*		-.22*						.20*
Hif			.21*				.24*		.26**		
Him			.23*		-.23*	<b>.30**</b>	<b>.31**</b>		<b>.43**</b>		
Hin		-.20*	<b>.36**</b>	-.22*	-.26**	<b>.40**</b>	<b>.46**</b>	.29**	<b>.46**</b>		
Wm											
Wg	.25*	-.23*									.22*
Ws					-.20*						
Wif					-.25*	.26**					.21*
Wim					-.26**	.24*					
Win					-.21*	.25*				<b>.30**</b>	
Sm											
Sg											
Ss							.23*	.24*	.27**		
Sif		-.21*				.21*	<b>.34**</b>	<b>.31**</b>	.27**		
Sim	<b>.30**</b>	-.25*				<b>.38**</b>	.27**	.23*	.24*		.20*
Sin		<b>-.34*</b>									
Em	.21*	*		-.20*		.26**	.24*	.24*			
Eg							.26**			<b>.40**</b>	.21*
Es							.29**			<b>.43**</b>	
Eif										<b>.42**</b>	
Eim							.26**			<b>.46**</b>	
Ein		-.27**					.27**			<b>.46**</b>	

\* $p < .05$ ; \*\* $p < .01$ . Effect Size: .10 small; .30 **medium**; .50 **large** (Cohen, 1988).

**CEDS** = Chabot Emotional Differentiation Scale; **IAS** = The Fear of Intimacy Scale; **RAwS** = The Relational Awareness Scale; **AaTS** = Anxiety about Transition Scale; **CES-D** = The Center for Epidemiologic Studies Depression Scale; **SLC** = Satisfaction with Life Scale; **RSE** = Rosenbreg Self-Esteem Scale; **MSPSS** = Multidimensional Scale of Perceived Social Support (Global score; Significant Person, Family, and Friend subscales).

Family subscale of MSPSS is positively correlated with Home context index (MSPSS-family/CIh:  $r = .28, p < .01$ ) and exchanged resources within home setting (MSPSS-family/Hm:  $r = .41, p < .01$ ; MSPSS-family/Hg:  $r = .42, p < .01$ ; MSPSS-family/Hif:  $r = .26, p < .01$ ; MSPSS-family/Him:  $r = .43, p < .01$ ; MSPSS-family/Hin:  $r = .46, p < .01$ ) and resources in Survival setting that may be connected to family care (MSPSS-family/Ss:  $r = .27, p < .01$ ; MSPSS-family/Sif:  $r = .27, p < .01$ ; MSPSS-family/Sim:  $r = .24, p < .05$ ).

Friend subscale of MSPSS is positively related to Enjoyment (MSPSS-friend/CIe:  $r = .47, p < .01$ ) and Work context index (MSPSS-friend/CIe:  $r = .27, p < .01$ ), all global exchanged resources (MSPSS-friend/RIm:  $r = .25, p < .05$ ; MSPSS-friend/RIg:  $r = .27, p < .01$ ; MSPSS-friend/RIs:  $r = .29, p < .01$ ; MSPSS-friend/RIf:  $r = .36, p < .01$ ; MSPSS-

friend/RIm:  $r = .35, p < .01$ ; MSPSS-friend/RIn:  $r = .44, p < .01$ ) and exchanged resources within Enjoyment setting (MSPSS-friend/Eg:  $r = .40, p < .01$ ; MSPSS-friend/Es:  $r = .43, p < .01$ ; MSPSS-friend/Eif:  $r = .42, p < .01$ ; MSPSS-friend/Eim:  $r = .46, p < .01$ ; MSPSS-friend/Ein:  $r = .46, p < .01$ ).

Significant person is positively related to services (MSPSS-person/RIs:  $r = .23, p < .05$ ) and intimacy (MSPSS-person/Riin:  $r = .31, p < .01$ ) global exchanged resources, intimacy in Home setting (MSPSS-person/Hin:  $r = .29, p < .01$ ), and services (MSPSS-person/Ss:  $r = .24, p < .05$ ), information (MSPSS-person/Ss:  $r = .31, p < .01$ ), importance (MSPSS-person/Ss:  $r = .23, p < .05$ ) and intimacy (MSPSS-person/Ss:  $r = .24, p < .05$ ) exchanged resources within Survival setting. These and the others results confirm coherent correlations between RC-Ecomap indexes and concurrent instruments, evidencing concurrent validity of the analyzed tool.

No difference were found between 50 males and 50 females, except for Home setting index (males: Mean Rank = 41.73; women: Mean Rank = 59.27; Wilcoxon Test:  $Z = -3.04; p = .002; r = .304$ ): The multiple role of a woman in Home setting determines higher relational contacts than men.

Comparisons between age groups (Table 5.1.8) emphasize the different life cycles: Participant of 30-31 y.o. are more devoted to career and their relationship in work setting are based on work activity (Ws-Mean Rank = 64.78; Kruskal Wallis Test:  $\chi^2 = 9.86; p = .043; \eta^2 = .10$ ) and training (Wif-Mean Rank = 63.25; Kruskal Wallis Test:  $\chi^2 = 10.51; p = .033; \eta^2 = .11$ ); 35-36 y.o. participants seems more committed in caring of themselves or others of their family registering higher levels of Survival context index (CIs-Mean Rank = 67.70; Kruskal Wallis Test:  $\chi^2 = 14.01; p = .007; \eta^2 = .14$ ), basing survival relationships on services (Ss-Mean Rank = 67.05; Kruskal Wallis Test:  $\chi^2 = 14.00; p = .007; \eta^2 = .14$ ), information (Sif-

**Table 5.1.8. RC-Ecomap Index comparison between age groups : 15-16 y.o. (n = 20) , 20-21 y.o. (n = 20), 25-26 y.o. (n = 20), 30-31 y.o., and 35-36 y.o. (n = 20) , (N = 100).**

	Mean Rank for age group					Kruskal Wallis Test		
	15-16	21-21	25-26	30-31	35-36	$\chi^2$	$p$	$\eta^{2*}$
CIs	41.20	36.88	51.98	54.75	67.70	14.01	.007	<b>.14</b>
Ws	51.65	52.63	36.68	64.78	46.78	9.86	.043	<b>.10</b>
Wif	57.53	51.83	38.25	63.25	41.65	10.51	.033	<b>.11</b>
Ss	36.90	43.48	46.65	58.43	67.05	14.00	.007	<b>.14</b>
Sif	39.10	36.85	54.43	54.85	67.28	15.05	.005	<b>.15</b>
Sim	46.68	34.58	51.23	58.33	61.70	10.92	.027	<b>.11</b>

Sin	40.43	38.40	55.33	59.80	58.55	11.29	.023	<b>.12</b>
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\* $\eta^2 = X^2 / (N-1)$ ;  $\eta^2 < .02$  no effect;  $.02 < \eta^2 < .06$  effect size small;  $.06 < \eta^2 < .14$  effect size medium;  $\eta^2 > .14$  effect size large.

Mean Rank = 67.28; Kruskal Wallis Test:  $\chi^2 = 15.05$ ;  $p = .005$ ;  $\eta^2 = .15$ ), importance (Sim-Mean Rank = 61.70; Kruskal Wallis Test:  $\chi^2 = 10.92$ ;  $p = .005$ ;  $\eta^2 = .15$ ), and intimacy (Sim-Mean Rank = 58.55; Kruskal Wallis Test:  $\chi^2 = 11.29$ ;  $p = .023$ ;  $\eta^2 = .13$ ).

### *Discussion and Conclusion*

The study evidences reliability, internal validity, and concurrent validity of RC-Ecomap. Results confirm theoretical construct of RC-Ecomap, general reliability, and reliability of RC-Ecomap indexes within each setting.

This research study shows RC-Ecomap measures distinguish Setting from Context measures, confirming the theoretical construct of the tool.

The congruent relations with concurrent scales evidence the concurrent validity, even if low correlation values are found with small or medium effect sizes: This condition could be the result of limitations of RC-Ecomap and differences between dimension measured by different instruments. The Multidimensional Scale of Perceived Social Support (Zimet, Dahlen, Zimet, & Farley, 1988), a 12-item instrument, is the most similar to RC-Ecomap, but it studies only one aspect of social network, the support, while RC-Ecomap is a more complex tool that evaluates the relationships in different settings, through frequency of contact, self-interest for relationships, the perception of the interest of others for the relationship and the resources exchanged.

Data analysis permits us to describe interesting aspects of the relational network of participants: The development of intimate relationships in the settings and contents follows an evolutionary cycle starting from origin family to living family and work, changing roles through the settings; money, goods and importance are relevant contents of intimate relationships.

Results suggest RC-Ecomap, Italian version, has an acceptable reliability, evidenced internal validity, and an acceptable concurrent validity. A test-retest correlation may complete the reliability check of RC-Ecomap Italian version.

### ***Study 2: Evidence for the reliability and validity of the Spanish version of RC-Ecomap. Administration to a Spanish university student sample***

Collaboration with researchers on family relations networks at University of Seville, including psychology students, allowed us to adapt RC-Ecomap to the Spanish context and implement an early examination of psychometric characteristics, reliability, internal validity, and concurrent validity of the instrument.

### *Participants*

The sample of 186 students was representative of the student population at the Faculty of Psychology at the University of Seville (South-West of Spain). All participants were students in their fourth year of the degree course. Their mean age was 24.15 years ( $SD = 5.09$ ; min = 19; max = 57): Males was 21 (11.41%) and females 163 (88.59%). Singles were 35.87%, engaged 51.63%, and cohabiting and/or married 12.50%. Among the participants were 15 students who work: 7 as manager (3.80%), 5 as white-collar (2.72), and 3 as blue-collar (1.63).

### *Instruments*

To participants were administered two instruments. The Individual RC-Ecomap was adapted to Spanish context from an Italian and a Spaniard by double translation: Italian to Spanish and then Spanish to Italian.

The second tool was the Perceived Parental Relational Style Questionnaire – Spanish version – (Colesso, 2006) which measures as an adult perceives relationships with own parents when subject was growing. The questionnaire is composed by three subscales: the Abusive-Apathetic Parental Style subscale (AA-PS); the Reactive-Repetitive Parental Style subscale (RR-PS); and the Creative-Conductive Parental Style subscale (CC-PS). The AA-RR-CC model (L'Abate, 2005) is the theoretical construct of the tool. The evaluation of complexity of a relationship needs more different points of view: Functional (Creative-Conductive), semi functional (Reactive-Repetitive), and dysfunctional (Abusive-Apathetic). Cronbach's Alpha for the three scales were .73 for AA-PS, .74 for RR-PS, and .79 for CC-PS (Cusinato & Colesso, 2007); in a recent administration was found respectively a reliability of .71, .74, and .80 (Colesso & Scilletta, 2009).

### *Analyses*

The analysis design of the first nomothetic research with Italian participants (Study 1) was utilized in order to verify psychometrical properties, reliability, and validity RC-Ecomap Spanish version: Descriptive analysis on RC-Ecomap indexes (average, standard deviation,

kurtosis, and skewness); Cronbach's Alpha within setting, context, and resources indexes to test reliability of the measures; and Spearman's Rho correlation between RC-Ecomap indexes and concurrent measures (after checking their psychometrical properties).

### Results

In table 5.2.1 descriptive characteristics of RC-Ecomap indexes – Spanish version – are reported. Most of them show a bell shape distribution with skewness and kurtosis between about +1 and -1 (Barbaranelli, 2007).

Reliability evaluations confirm (Table 5.2.2) an acceptable general reliability of the instrument, evidencing its congruence with the theoretical construct: Perceived relational contacts and support within each setting (Six) and context (CIx) are homogeneous and Cronbach's Alpha are respectively between .68 - .85 and .67 - .85. As in Italian Research with an Italian sample (Study 1), I found low values of reliability for Contents of Relationships.

**Table 5.2.2. RC-Ecomap reliability for Setting, Context, and Resources Indexes (N = 184).**

RC-Ecomap Indexes			Cronbach's Alpha	n item
Settings*	Home	Slh	<b>.68</b>	7
	Work	Slw	<b>.79</b>	7
	Survival	SlS	<b>.74</b>	6
	Enjoyment	Sle	<b>.85</b>	7
Contexts*	Home	Clh	<b>.67</b>	7
	Work	Clw	<b>.77</b>	7
	Survival	ClS	<b>.73</b>	6
	Enjoyment	Cle	<b>.85</b>	7
Resources**	Money	RIm	.40	4
	Goods	Rlg	.53	4
	Services	RIs	.54	4
	Information	Rlif	.45	4
	Importance	Rlim	.46	4
	Intimacy	Rlin	.50	4

\*Individual indexes of the significant persons reported; \*\*Resource Indexes in the four settings.

There is homogeneity in all contents of exchanged resources (Table 5.2.3) within Work (that is University), Survival, and Enjoyment settings and in some exchanged resources within Home setting. In accordance with the Relational Competence Theory (L'Abate, 2005), the relational competences are built within each setting and may be different between the different settings. To interpret these results we have also take into account the peculiarity of the sample: They are student living in an University City, with enhanced social network that encompass classmates, friends, roommates to share the costs of flat, and university personnel

as professors, staff canteen and so on. Home is a place where students come back just on weekends. Work (University), Survival and Enjoyment contexts take place at the University.

**Table 5.2.3. RC-Ecomap reliability: Setting \* Resources Indexes (N = 184).**

RC-Ecomap Indexes			Cronbach's Alpha	n item**	
Home	*	money	Hm	.50	6
Home	*	goods	Hg	.56	7
Home	*	services	Hs	.44	7
Home	*	information	Hif	<b>.64</b>	7
Home	*	importance	Him	<b>.65</b>	7
Home	*	intimacy	Hin	<b>.62</b>	7
Work	*	money	Wm	<b>.77</b>	7
Work	*	goods	Wg	<b>.79</b>	7
Work	*	services	Ws	<b>.74</b>	7
Work	*	information	Wif	<b>.74</b>	7
Work	*	importance	Wim	<b>.75</b>	7
Work	*	intimacy	Win	<b>.72</b>	7
Survival	*	money	Sm	<b>.60</b>	6
Survival	*	goods	Sg	<b>.62</b>	6
Survival	*	services	Ss	<b>.62</b>	6
Survival	*	information	Sif	<b>.69</b>	6
Survival	*	importance	Sim	<b>.67</b>	6
Survival	*	intimacy	Sin	<b>.67</b>	6
Enjoyment	*	money	Em	<b>.78</b>	7
Enjoyment	*	goods	Eg	<b>.81</b>	7
Enjoyment	*	services	Es	<b>.79</b>	7
Enjoyment	*	information	Eif	<b>.84</b>	7
Enjoyment	*	importance	Eim	<b>.84</b>	7
Enjoyment	*	intimacy	Ein	<b>.84</b>	7

\*\*Resources exchanged with each reported significant person in each setting.

In order to obtain concurrent measures of validity for RC-Ecomap, linear relations between RC-Ecomap indexes and the three subscales of Perceived Parental Relational Style Questionnaire (Colesso, 2006) have been checked by scatterplot examinations, and then Spearman's Rho correlations were calculated. The psychometric properties of the three subscales of Perceived Parental Relational Style Questionnaire (Colesso, 2006) are showed in Table 5.2.4.

**Table 5.2.4. Psychometric characteristics Perceived Parental Relational Style Questionnaire (N = 184).**

Subscales*	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Cronbach's Alpha	N items
AA-PPS	8.79	2.84	2.26	5.17	.85	7
RR-PPS	12.61	3.45	0.72	0.26	.78	7
CC-PPS	20.79	3.97	-0.82	0.99	.84	7

\***AA-PPS** = Abusive-Apathetic subscale; **RR-PPS** = Reactive-Repetitive subscale; **CC-PPS** = Creative-Conductive subscale.

Spearman's Rho correlations are reported in table 5.2.5 and 5.2.6. As we can see, statistically significant correlations between concurrent measures and Setting indexes are fewer than correlations measure and Context indexes: Difference between Setting end Context constructs is confirmed. Furthermore Parental Relational Style when students were growing, are related to current Home and Work (University) Contexts, and to global

**Table 5.2.5. RC-Ecomap concurrent validity: Spearman's Rho correlations between RC-Ecomap Setting, Context, and Resources Indexes and Perceived Parental Relational Style Questionnaire (N = 184).**

RC-Ecomap Indexes	AA-PPS <sup>(1)</sup>	RR-PPS <sup>(1)</sup>	CC-PPS <sup>(1)</sup>
SIh			
SIw	-.19*		.18*
SIs			
SIe			
CIh	-.26**	-.15*	.20**
CIw	-.22**	-.16*	.21**
CIs			
Cle			
RIm			
RIg	-.19*		
RIIs	-.20*	-.22**	.18*
RIIf	-.21*		.18*
RIIm	-.29**	-.29**	.26**
RIIn	-.28**	-.19*	.23**

\* $p < .05$ ; \*\* $p < .01$ . Effect Size: .10 small; .30 **medium**; .50 **large** (Cohen, 1988).

<sup>(1)</sup> **AA-PPS** = Abusive-Apathetic subscale; **RR-PPS** = Reactive-Repetitive subscale; **CC-PPS** = Creative-Conductive subscale.

exchanged resources: Negative correlations were found for AA-PPS (SIw:  $r = -.19$ ,  $p < .05$ ; CIh:  $r = -.26$ ,  $p < .01$ ; CIw:  $r = -.22$ ,  $p < .01$ ; RIg:  $r = -.17$ ,  $p < .05$ ; RIIf:  $r = -.20$ ,  $p < .05$ ; RIIm:  $r = -.29$ ,  $p < .01$ ; RIIn:  $r = -.28$ ,  $p < .01$ ) and RR-PPS (CIh:  $r = -.15$ ,  $p < .05$ ; CIw:  $r = -.16$ ,  $p < .05$ ; RIIs:  $r = -.22$ ,  $p < .01$ ; RIIm:  $r = -.29$ ,  $p < .01$ ; RIIn:  $r = -.19$ ,  $p < .05$ ) subscales; Positive correlations were found for CC-PPS (SIw:  $r = .18$ ,  $p < .05$ ; CIh:  $r = .20$ ,  $p < .01$ ; CIw:  $r = .21$ ,  $p < .01$ ; RIIs:  $r = .18$ ,  $p < .05$ ; RIIf:  $r = .18$ ,  $p < .05$ ; RIIm:  $r = .26$ ,  $p < .01$ ; RIIn:  $r = .23$ ,  $p < .01$ ).

These relations are detailed in Spearman correlations between concurrent scale and Setting\*Exchanged Resources RRC-Ecomap Indexes, showed in table 5.2.6. AA-PPS is negatively related to all exchanged resourced within Home (Hm:  $r = -.21$ ,  $p < .01$ ; Hg:  $r = -.26$ ,  $p < .01$ ; Hs:  $r = -.25$ ,  $p < .01$ ; Hif:  $r = -.26$ ,  $p < .01$ ; Him:  $r = -.32$ ,  $p < .01$ ; Hin:  $r = -.33$ ,  $p < .01$ ) and Work-University (Wif:  $r = -.18$ ,  $p < .05$ ; Wim:  $r = -.24$ ,  $p < .01$ ; Win:  $r = -.24$ ,  $p < .01$ ) contexts. Negative correlations were found for RR-PPS relations (Him:  $r = -.17$ ,  $p < .05$ ; Hin:  $r = -.20$ ,  $p < .01$ ; Wg:  $r = -.16$ ,  $p < .05$ ; Ws:  $r = -.18$ ,  $p < .05$ ; Wim:  $r = -.20$ ,  $p < .01$ ;

Win:  $r = -.19, p < .05$ ). Positive correlations results between CC-PPS measures and exchanged resources within Home (Hg:  $r = .19, p < .05$ ; Hs:  $r = .20, p < .01$ ; Hif:  $r = .20, p < .01$ ; Him:  $r = .27, p < .01$ ; Hin:  $r = .32, p < .01$ ) and Work-University contexts (Wif:  $r = .22, p < .01$ ; Wim:  $r = .24, p < .01$ ; Win:  $r = .24, p < .01$ ).

**Table 5.2.6. RC-Ecomap concurrent validity: Spearman's Rho correlations between RC-Ecomap Setting \* Resources Indexes and Concurrent measures (N = 184).**

RC-Ecomap Indexes	AA-PPS <sup>(1)</sup>	RR-PPS <sup>(1)</sup>	CC-PPS <sup>(1)</sup>
Hm	-.21**		
Hg	-.26**		.19*
Hs	-.25**		.20**
Hif	-.26**		.20**
Him	-.32**	-.17*	.27**
Hin	-.33**	-.20**	.32**
Wm			
Wg		-.16*	
Ws		-.18*	
Wif	-.18*		.22**
Wim	-.24**	-.20**	.24**
Win	-.24**	-.19*	.24**
Sm			
Sg			
Ss			
Sif			
Sim			
Sin			
Em			
Eg			
Es			
Eif			
Eim			
Ein			

\* $p < .05$ ; \*\* $p < .01$ . Effect Size: .10 small; .30 **medium**; .50 **large** (Cohen, 1988).

<sup>(1)</sup> **AA-PPS** = Abusive-Apathetic subscale; **RR-PPS** = Reactive-Repetitive subscale; **CC-PPS** = Creative-Conductive subscale.

### *Discussion and Conclusion*

The research study confirms results of the research 1 (Paragraph 5.1) on psychometric properties, reliability, and concurrent validity of RC-Ecomap. I have to underline the low correlation values found that could be due to differences between constructs evaluated by different instruments. I can only consider these results as early evidences of reliability and validity of the Spanish version of the instrument. Independent variables of participants are not balanced and results can be referred only at a specific population: The Spanish university students. A research with a representative sample of Spanish population is a need to complete the process of checking reliability and validity of RC-Ecomap Spanish version. In addition, I

have to select more appropriate Spanish language tools for the evaluation of concurrent validity.

However new information has been got: relations between past perceived parental relations and concurrent significant relationships show that relational competences are influenced by parental styles.

After checking psychometric properties, reliability, internal and concurrent validity of RC-Ecomap, below are presented three study research to verify predictive and differential validity by comparing clinical population and control group: Parents of psychotic and institutionalized patients; alcoholics attending a rehabilitative program, and high and low scores to a Narcissism Scale.

### ***Study 3: RC-Ecomap of parents of psychotic patients***

The differential and predictive validity of RC-Ecomap was tested by a study research on social network of parents of institutionalized psychotic patients compared with a control group. Several studies on psychotics in their families show evidence for relations between behavior of psychotics and their family suggesting underlying both genetic and environmental factors (Kavanagh, Pourmand, White, Robertson, Halford, & Vaughan, 2008; Lataster, Collip, Lardinois, van Os, & Myin-Germeys, 2010; Levene, Lancee, Seeman, Skinner, & Freeman, 2009). A pilot study (Casellato, 2007) was conducted to compare relational competences of

**Table 5.3.1. Comparison between RC-Ecomap (2007) indices of 20 psychotics and control group (n = 20), Casellato (2007).**

Indices of RC-Ecomap 2007	t-test					
	<i>t</i>	df	Psychotics <i>M</i> <sub>1</sub>	Control <i>M</i> <sub>2</sub>	<i>p</i> -value	Cohen's <i>d</i>
Home* money Hm	2.16	38	4.40	2.10	.037	<b>.70</b>
Home* goods Hg	2.00	38	4.85	2.65	.053	<b>.65</b>
Home* services Hs	-0.38	38	11.75	12.30	.708	
Home* informati on Hif	-0.18	38	12.30	12.60	.858	
Home* importan ce Him	0.00	38	15.80	15.80	1.000	
Home* intimacy Hin	-0.29	38	10.70	11.10	.773	
Work* money Wm	0.35	38	1.00	0.65	.726	
Work* goods Wg	0.66	38	0.75	0.25	.515	
Work* services Ws	-0.89	38	3.80	4.95	.380	
Work* informati on Wif	0.03	38	5.55	5.50	.973	
Work* importan ce Wim	0.55	38	5.55	4.75	.583	
Work* intimacy Win	0.71	38	4.85	4.00	.484	
Survival* money Sm	-0.56	38	0.25	0.50	.576	
Survival* goods Sg	-0.81	38	0.15	0.50	.425	
Survival* services Ss	4.92	38	3.55	0.25	.001	<b>1.60</b>
Survival* informati on Sif	6.47	38	3.75	0.30	.001	<b>2.10</b>
Survival* importan ce Sim	7.09	38	4.05	0.20	.001	<b>2.30</b>
Survival* intimacy Sin	6.58	38	3.70	0.20	.001	<b>2.14</b>
Enjoyment* money Em	-1.62	38	0.05	0.70	.113	
Enjoyment* goods Eg	-1.40	38	0.00	0.55	.171	
Enjoyment* services Es	-5.38	38	1.55	7.25	.001	<b>-1.75</b>
Enjoyment* informati on Eif	-4.49	38	3.30	9.50	.001	<b>-1.46</b>
Enjoyment* importan ce Eim	-4.86	38	3.50	8.55	.001	<b>-1.58</b>
Enjoyment* intimacy Ein	-5.06	38	3.20	8.10	.001	<b>-1.64</b>

Effect size:  $.05 \leq d < .08$  **medium**;  $d \geq .08$  **large**. Not showed  $d < .05$ .

20 psychotic participants (age:  $M = 38.05$ ,  $DS = 8.18$ ; 50% male and 50% female) with those of 20 non-clinical participants matched by gender and age (age:  $M = 37.50$ ,  $DS = 6.82$ ). A first prototype of RC-Ecomap was administered to participants and data were processed by t-test analyses. Results are reported in Table 5.3.1.

Psychotics compared to controls, demonstrated: (a) Within the Home greater indexes about Money ( $t(38) = 2.16$ ;  $p = .037$ ; Cohen's  $d = .70$ ) and Goods ( $t(38) = 2.00$ ;  $p = .053$ ; Cohen's  $d = .65$ ); (b) within the Survival context greater index on services ( $t(38) = 4.92$ ;  $p = .001$ ; Cohen's  $d = 1.60$ ), information ( $t(38) = 6.47$ ;  $p = .001$ ; Cohen's  $d = 2.10$ ), importance ( $t(38) = 7.09$ ;  $p = .001$ ; Cohen's  $d = 2.30$ ), and intimacy ( $t(38) = 6.58$ ;  $p = .001$ ; Cohen's  $d = 2.14$ ); (c) within Enjoyment context lower indexes on services ( $t(38) = -5.38$ ;  $p = .001$ ; Cohen's  $d = -1.75$ ), information ( $t(38) = -4.49$ ;  $p = .001$ ; Cohen's  $d = -1.46$ ), importance ( $t(38) = -4.86$ ;  $p = .001$ ;

Cohen's  $d = -1.58$ ), and intimacy ( $t(38) = -5.06$ ;  $p = .001$ ; Cohen's  $d = -1.64$ ). These results suggested that psychotic participants have a greater utilitarian rapport with their own relatives who are caring for them, while looking within the medical personnel for receiving information, services, intimacy and a sense of Importance. They have reduced exchanges within Enjoyment context. On the basis of these studies, I expect that relational competence skills of parents with psychotic children will be consistent with Casellato (2007) findings concerning Survival and Enjoyment settings.

### *Participants*

RC-Ecomap was administered to 13 couples ( $n = 26$ ) of parents of psychotic and institutionalized patients who had an average age of 30.08 years old ( $DS = 8.14$ ). Two parents were singles (7.7%), four divorced (15.4%), and twenty married (76.9%). Their average age was 58.09 years old ( $DS = 6.63$ ,  $min = 44$ ;  $max = 70$ ); 30.8% had a primary education, 30.8% a professional education while 38.5% had a high school education. Among the participants 4 worked as manager (15.4%), 7 as white collar (26.9%), 6 self-employed (23.1%), 2 unemployed (7.7%), 2 household (7.7%), and 5 retired (19.2%). A control group of 13 mothers and 13 fathers was selected by balancing the age (Age:  $M = 56.00$ ;  $DS = 5.02$ ,  $min = 43$ ;  $max = 64$ ). All participants were living in the North of Italy.

### *Analyses*

In order to check predictive and differential validity of RC-Ecomap, indexes of the two groups were compared. The data collected were processed by a non parametric statistic – the Mann-Whitney test – because of the categorical nature of data. Effect size of Mann-Whitney results were estimated by the formula that Field (2005, p. 532) proposed:

$$r = \frac{Z}{\sqrt{N}}$$

where  $N$  is the total number of the samples, that is the number of experimental and control participants added. He suggested respectively .10, .30, and .50 as standard values of  $r$  for small, medium, and large sizes. The sign does not contain much information.

### *Results*

Results of comparison are reported in Tables 5.3.2 and 5.3.3.

**Table 5.3.2. Comparison between RC-Ecomap (2010) indexes (settings, contexts, and resources) of parents of psychotics (n = 26) and control (n = 26).**

RC-Ecomap Indexes**	Mean Rank		Mann-Whitney U	Z	p	r* = Z / √(m+n)
	Parents of Psychotics	Control				
SIh	23.17	29.83	251.50	-1.59	.11	
SIw	23.00	30.00	247.00	-1.78	.08	-.25
SIs	29.48	23.52	260.50	-1.43	.15	
SIe	19.35	33.65	152.00	-3.43	.01	<b>-.48</b>
CIh	24.13	28.87	276.50	-1.13	.26	
CIw	22.87	30.13	243.50	-1.85	.06	-.26
CIs	29.65	23.35	256.00	-1.51	.13	
CIE	18.77	34.23	137.00	-3.70	.01	<b>-.51</b>
RI <sub>m</sub>	19.65	33.35	160.00	-3.26	.01	<b>-.45</b>
RI <sub>g</sub>	17.15	35.85	95.00	-4.45	.01	<b>-.62</b>
RI <sub>s</sub>	21.23	31.77	201.00	-2.51	.01	<b>-.35</b>
RI <sub>if</sub>	20.92	32.08	193.00	-2.65	.01	<b>-.37</b>
RI <sub>im</sub>	20.88	32.12	192.00	-2.67	.01	<b>-.37</b>
RI <sub>in</sub>	21.88	31.12	218.00	-2.20	.03	<b>-.31</b>

\* Effect size: .01 < r < .30 small; .30 ≤ r < .50 **medium**; r ≥ .50 **large**. r < .10: Not showed.

\*\* **SIh** = Home Setting index; **SIw** = Work Setting index, **SIs** = Survival Setting index; **SIe** = Enjoyment Setting index. **CIh** = Home Context index; **CIw** = Work Context index, **CIs** = Survival Context index; **CIE** = Enjoyment Context index. **RI<sub>m</sub>** = money content index; **RI<sub>g</sub>** = goods content index; **RI<sub>s</sub>** = services content index; **RI<sub>if</sub>** = information content index; **RI<sub>im</sub>** = importance content index, **RI<sub>in</sub>** = intimacy content index.

Parents of institutionalized psychotics show statistically significant lower scores of Enjoyment setting index (SIe: Z = -3.43, p = .001, r = -.476), Enjoyment context index (CIE: Z = -3.70, p = .01, r = -.51), and all global exchanged resources (RI<sub>m</sub>: Z = -3.26, p = .01, r = -.45; RI<sub>g</sub>: Z = -4.45, p = .01, r = -.62; RI<sub>s</sub>: Z = -2.51, p = .01, r = -.35; RI<sub>if</sub>: Z = -2.65, p = .01, r = -.37; RI<sub>im</sub>: Z = -2.67, p = .01, r = -.37; RI<sub>in</sub>: Z = -2.20, p = .03, r = -.31).

Comparisons of Setting\*Exchanged Resources indexes show lower index of parents of psychotics in Home (Hg: Z = -2.86, p = .01, r = -.40; Hif: Z = -2.26, p = .02, r = -.31) Work (Wg: Z = -2.28, p = .02, r = -.32) and Enjoyment (Em: Z = -4.24, p = .01, r = -.59; Eg: Z = -4.36, p = .01, r = -.61; Es: Z = -3.64, p = .01, r = -.50; Eif: Z = -3.74, p = .01, r = -.52; Eim: Z = -3.86, p = .01, r = -.54; Ein: Z = -3.89, p = .01, r = -.54) settings, while greater scores are registered in Survival setting (Sif: Z = -1.89, p = .06, r = -.26; Sim: Z = -1.92, p = .06, r = -.27), even if their effect size are small.

**Table 5.3.3. Comparison between RC-Ecomap (2010) indexes (settings\*resources) of parents of psychotics (n = 26) and control (n = 26).**

RC-Ecomap Indexes**	Mean Rank		Mann-Whitney U	Z	p	r* = Z / $\sqrt{(m+n)}$
	Parents of Psychotics	Control				
Hm	22.69	30.31	239.00	-1.81	.070	-.25
Hg	20.50	32.50	182.00	-2.86	.004	<b>-.40</b>
Hs	23.17	29.83	251.50	-1.58	.113	
Hif	21.75	31.25	214.50	-2.26	.024	<b>-.31</b>
Him	22.65	30.35	238.00	-1.83	.067	-.25
Hin	24.65	28.35	290.00	-0.88	.380	
Wm	22.79	30.21	241.50	-1.89	.059	-.26
Wg	22.02	30.98	221.50	-2.28	.023	<b>-.32</b>
Ws	22.87	30.13	243.50	-1.85	.064	-.26
Wif	22.77	30.23	241.00	-1.90	.058	-.26
Wim	22.96	30.04	246.00	-1.80	.072	-.25
Win	23.25	29.75	253.50	-1.65	.098	
Sm	26.92	26.08	327.00	-0.20	.840	
Sg	27.96	25.04	300.00	-0.70	.486	
Ss	28.13	24.87	295.50	-0.78	.435	
Sif	30.46	22.54	235.00	-1.89	.059	-.26
Sim	30.52	22.48	233.50	-1.92	.055	-.27
Sin	29.46	23.54	261.00	-1.41	.158	
Em	17.65	35.35	108.00	-4.24	.001	<b>-.59</b>
Eg	17.38	35.62	101.00	-4.36	.001	<b>-.61</b>
Es	18.90	34.10	140.50	-3.64	.001	<b>-.50</b>
Eif	18.69	34.31	135.00	-3.74	.001	<b>-.52</b>
Eim	18.44	34.56	128.50	-3.86	.001	<b>-.54</b>
Ein	18.37	34.63	126.50	-3.89	.001	<b>-.54</b>

\* Effect size: .01 < r < .30 small; .30 < r < .50 **medium**; r > .50 **large**. r < .10: Not showed.

\*\* Setting (**H** = home; **W** = work; **S** = survival; **E** = Enjoyment) \* Resources (**m** = money; **g** = goods; **s** = services; **if** = information; **im** = importance; **in** = intimacy). E.g. Hm = money (m) exchanged in home setting (H).

### *Discussion and Conclusion*

Results suggest that parents of institutionalized psychotic patients generally show reduced relational competences. In detail, they have an established relationship with the staff that takes care of their sons and daughters. On the other hand, they have reduced relationships in their Enjoyment setting: It seems they leave a seclusion condition among home setting, work setting, and the Health Institution. Results are consistent with research on relational competences of psychotics. The study evidences predictive and differential properties of RC-Ecomap.

### ***Study 4: RC-Ecomap of alcoholics attending the Hudolin's rehabilitative program***

A new investigation to test predictive and differential validity was conducted on alcoholics attending a rehabilitative program (AaRP) based on family treatment, and compared with controls. A first study (Colesso, 2005) showed that alcoholics possess reduced and deteriorated relational competences, with consequent cutback of supportive relationships. The Hudolin's rehabilitative program for alcoholics focuses on the alcoholic family by enhancing

functional links within and out of family. I expected the AaRP show no or slight quantitative differences compared to control group with regard to the relational settings and contexts.

### *Participants*

To investigate this hypothesis RC-Ecomap was administered to 20 AaRP, 10 males and 10, attending rehabilitation programs of “Alcoholics under Treatment Clubs Association” (ACAT). Their average age was 53.20 years ( $DS = 6.96$ ; Min = 37, Max = 61). About the duration of alcohol abstinence: 27.5%, 1.5 years; 20%, 2 years; 15%, 4 years; 10% from 7 to 13 years; 27.5%, from 14 to 19 years. 75% of subjects deny relapses during the attendance of the rehabilitation program, 10% of participants assert two relapses, while 15% of subjects affirm that actually are still drinking alcohol and aren't able to maintain the abstinence. The Control group ( $M = 53.00$ ;  $DS = 6.88$ ; Min = 36; Max = 61) has been selected for pairing one to one with experimental group. All participants were from Treviso, Northern town of Italy.

### *Analysis*

Comparison between AaRP and controls were run by the Mann-Whitney test and Field's effect size method (2005, p.532) applied to collected data.

### *Results*

Results of comparison are reported in Tables 5.4.1 and 5.4.2. AaRP evidence lower and statistically no significant RC-Ecomap Setting and Context scores than controls, while statistically significant lower values are evidenced in differences are evidenced for global Resource Index of money ( $Z = -3.76$ ,  $p = .01$ ,  $r = -.60$ ), goods ( $Z = -3.07$ ,  $p = .01$ ,  $r = -.49$ ), services ( $Z = -2.96$ ,  $p = .01$ ,  $r = -.47$ ), and importance ( $Z = -2.11$ ,  $p = .03$ ,  $r = -.33$ ).

Lower scores were registered in Home setting for goods content ( $Z = -1.95$ ,  $p = .05$ ,  $r = -.31$ ), in Survival setting for money ( $Z = -3.63$ ,  $p = .01$ ,  $r = -.57$ ), services ( $Z = -2.29$ ,  $p = .02$ ,  $r = -.36$ ), and importance ( $Z = -1.90$ ,  $p = .06$ ,  $r = -.30$ ) contents, and in Enjoyment setting for goods ( $Z = -2.71$ ,  $p = .01$ ,  $r = -.43$ ), services ( $Z = -2.34$ ,  $p = .02$ ,  $r = -.37$ ), and importance ( $Z = -2.12$ ,  $p = .03$ ,  $r = -.34$ ) contents.

AaRP evidence lower and statistically no significant RC-Ecomap Setting and Context scores than controls, while statistically significant lower values are evidenced in differences are evidenced for global Resource Index of money ( $Z = -3.76$ ,  $p = .01$ ,  $r = -.60$ ), goods ( $Z = -3.07$ ,  $p = .01$ ,  $r = -.49$ ), services ( $Z = -2.96$ ,  $p = .01$ ,  $r = -.47$ ), and importance ( $Z = -2.11$ ,  $p = .03$ ,  $r = -.33$ ).

**Table 5.4.1. Comparison between RC-Ecomap (2010) indexes (settings, contexts, and resources) of alcoholics under treatment (n = 20) and controls (n = 20).**

RC-Ecomap Indexes**	Mean Rank		Mann-Whitney U	Z	p	r* = Z / $\sqrt{(m+n)}$
	Alcoholics under treatment	Controls				
Slh	18.78	22.23	165.50	-0.94	.35	-.16
Slw	19.93	21.08	188.50	-0.32	.75	-.13
Sls	17.48	23.53	139.50	-1.65	.10	-.24
Sle	17.63	23.38	142.50	-1.56	.12	-.23
Clh	18.60	22.40	162.00	-1.03	.30	-.16
Clw	19.03	21.98	170.50	-0.81	.42	-.13
Cls	17.68	23.33	143.50	-1.53	.13	-.24
Cle	17.83	23.18	146.50	-1.45	.15	-.23
Rlm	13.55	27.45	61.00	-3.76	.01	<b>-.60</b>
Rlg	14.83	26.18	86.50	-3.07	.01	<b>-.49</b>
Rls	15.03	25.98	90.50	-2.96	.01	<b>-.47</b>
Rlif	17.95	23.05	149.00	-1.38	.17	-.22
Rlim	16.60	24.40	122.00	-2.11	.03	<b>-.33</b>
Rlin	17.85	23.15	147.00	-1.44	.15	-.23

\* Effect size:  $.01 \leq r < .30$  small;  $.30 \leq r < .50$  **medium**;  $r \geq .50$  **large**.  $r < .10$ : Not showed.

\*\* **Slh** = Home Setting index; **Slw** = Work Setting index, **Sls** = Survival Setting index; **Sle** = Enjoyment Setting index. **Clh** = Home Context index; **Clw** Work Context index, **Cls** = Survival Context index; **Cle** = Enjoyment Context index. **Rlm** = money content index; **Rlg** = goods content index; **Rls** = services content index; **Rlif** = information content index; **Rlim** = importance content index, **Rlin** = intimacy content index.

Lower scores were registered in Home setting for goods content ( $Z = -1.95$ ,  $p = .05$ ,  $r = -.31$ ), in Survival setting for money ( $Z = -3.63$ ,  $p = .01$ ,  $r = -.57$ ), services ( $Z = -2.29$ ,  $p = .02$ ,  $r = -.36$ ), and importance ( $Z = -1.90$ ,  $p = .06$ ,  $r = -.30$ ) contents, and in Enjoyment setting for goods ( $Z = -2.71$ ,  $p = .01$ ,  $r = -.43$ ), services ( $Z = -2.34$ ,  $p = .02$ ,  $r = -.37$ ), and importance ( $Z = -2.12$ ,  $p = .03$ ,  $r = -.34$ ) contents.

**Table 5.4.2. Comparison between RC-Ecomap (2010) indexes (settings\*resources of alcoholics under treatment (n = 20) and controls (n = 20).**

RC-Ecomap Indexes**	Mean Rank		Mann-Whitney U	Z	p	r* = Z / $\sqrt{(m+n)}$
	Alcoholics under treatment	Control				
Hm	17.88	23.13	147.50	-1.42	.15	-.23
Hg	16.90	24.10	128.00	-1.95	.05	<b>-.31</b>
Hs	18.03	22.98	150.50	-1.34	.18	-.21
Hif	19.75	21.25	185.00	-0.41	.68	
Him	18.45	22.55	159.00	-1.11	.27	-.18
Hin	17.50	23.50	140.00	-1.63	.10	-.26
Wm	18.98	22.03	169.50	-0.88	.38	-.14
Wg	20.70	20.30	196.00	-0.16	.87	
Ws	18.83	22.18	166.50	-0.94	.35	-.15
Wif	19.53	21.48	180.50	-0.54	.59	
Wim	18.65	22.35	163.00	-1.14	.25	-.18
Win	19.10	21.90	172.00	-1.32	.19	-.21
Sm	13.83	27.18	66.50	-3.63	.01	<b>-.57</b>
Sg	19.68	21.33	183.50	-0.52	.60	
Ss	16.28	24.73	115.50	-2.29	.02	<b>-.36</b>
Sif	17.00	24.00	130.00	-1.90	.06	<b>-.30</b>
Sim	21.08	19.93	188.50	-0.31	.75	
Sin	22.78	18.23	154.50	-1.68	.09	-.27
Em	18.65	22.35	163.00	-1.15	.25	-.18
Eg	16.00	25.00	110.00	-2.71	.01	<b>-.43</b>
Es	16.23	24.78	114.50	-2.34	.02	<b>-.37</b>
Eif	19.08	21.93	171.50	-0.77	.44	-.12
Eim	16.60	24.40	122.00	-2.12	.03	<b>-.34</b>
Ein	19.83	21.18	186.50	-0.38	.71	

\* Effect size:  $.01 \leq r < .30$  small;  $.30 \leq r < .50$  **medium**;  $r \geq .50$  **large**.  $r < .10$ : Not showed.

\*\* Setting (**H** = home; **W** = work; **S** = survival; **E** = Enjoyment) \* Resources (**m** = money; **g** = goods; **s** = services; **if** = information; **im** = importance; **in** = intimacy). E.g. Hm = money (m) exchanged in home setting (H).

### *Discussion and Conclusion*

Alcoholics who are attending the rehabilitative method of Hudolin (1990), that enhances functional relationships, show small sizes of reductions in Setting and Context indexes than controls, according to expectancies. Comparisons of content indexes evidences alcoholics under Hudolin's treatment with lower general indexes of money, goods, services, in general, and importance in Enjoyment setting, than controls. The results suggest that the network of relationships reconstituted again accepts the alcoholic, but on a new and different balance in the relationship. The alcoholic is now in a lesser power position, where power means control of money, goods, and services.

Results confirm predictor and differential validity of RC-Ecomap.

### ***Study 5: RC-Ecomap of non-clinical individuals with high and low scores at the Narcissism Scale***

In this last investigation to test predictive and differential validity of RC-Ecomap, I decided to study a population that theoretically should present higher RC-Ecomap indexes than a control group: The persons with a high and low narcissistic attitude.

I am not going to consider narcissism from a psychoanalytic or cognitive point of view. I am considering narcissism as a personality trait – no clinical – expressed through a series of well-defined behaviors such as self-centeredness, self-exalting, handling, and a dominant interpersonal orientation: Therefore involves a combination of promotion of self and interpersonal exploitation (Emmons, 1984, 1987; Paulhus, 1998; Paulhus & Williams, 2002; Rhodelwalt & Morf, 2005). This orientation is characterized by continuous attempts to support a grandiose self image through interpersonal validation (Morf & Rhodelwalt, 1993, 2001; Rhodelwalt, 2001, 2005; Rhodelwalt & Sorrow, 2002). Two components can be selected: The need to feel superior and the ability to activate a variety of interpersonal techniques to achieve this goal. When these behaviors are taken to extremes, adding a number of symptoms of pain and discomfort, we obtain what the DSM-IV (APA, 1994) calls “narcissistic personality disorder.” Regarding to not narcissistic attitude, Scabini and Rossi (2002) define it as a lower self narcissistic investment. In relation with others, he/she tends to promote other people, to the detriment of their own need. He/she does not want to create disadvantages to the other person. He/she prefers to give than to receive.

In both conditions, low and high narcissism, people need other people confirming their narcissistic attitude. So I decided to conduct a comparative study research on no clinical people with high and low scores, expecting higher RC-Ecomap indexes of them respect to controls.

#### *Participants*

Two groups of 50 participants were selected from 230 subjects to which a narcissism questionnaire was administrated: High score to Narcissism scale group (HsNg), which subjects registered a standardized T score greater than 60 at the narcissism questionnaire; Low score to Narcissism scale group (LsNg), which participants registered a standardized T score lower than 40 at the narcissism questionnaire.

The average age of HsNg participants was 28.60 ( $DS = 3.35$ , max = 35, min = 25). Males were 21 while females 29. Singles were 16, engaged 16, while 18 cohabiting and married. In the group, 11 participants had an elementary level of education, 30 had a high school diploma and 9 had a college degree. The participants of this group were living in Central Italy (Italian region “Marche”).

LsNg subjects had an average age of 29.70 ( $DS = 3.45$ , max = 35, min = 25). Females were 21 and males 29. Subjects living alone were 12, engaged 15, and 23 were married and cohabiting. In the sample, 20 subjects had an elementary level of education, 21 a high school level, and 9 a college degree level. Subjects of LsNg were from Veneto, North-East of Italy.

Control group was composed of 60 subjects, 50% males and 50% females, with an average age of 29.15 ( $DS = 3.43$ ; min = 25; max = 36) and living in “Veneto”, North-East of Italy.

### *Instruments*

To select participants was administered the 10-items Narcissism Scale (Bono, 2005), an adapted version of the Structural Clinical Interviews for DSM-IV Axis II Disorders – SCID II (APA, 1994) for Narcissistic Personality Disorder subscale. An administration of the instrument to 472 non clinical participants registered reliability of .79 (Cusinato & Colesso, 2007). RC-Ecomap was then administered to the selected individuals.

### *Analyses*

Comparisons between HsNg and controls, and LsNg-control were processed by the U Mann-Whitney test and the  $r$  effect size Field (2005) proposed.

### *Results*

Comparison between HsGn and control group (table 5.5.1, and 5.5.2) evidences HsGn subjects showed greater RC-Ecomap indexes of: Enjoyment setting (SJe:  $Z = -4.25$ ,  $p = .01$ ,  $r = -.41$ ); Survival context (CIs:  $Z = -3.70$ ,  $p = .01$ ,  $r = -.35$ ) and Enjoyment (CJe:  $Z = -3.93$ ,  $p = .01$ ,  $r = -.37$ ) contexts; general exchanged resources of information (RIf:  $Z = -5.40$ ,  $p = .01$ ,  $r = -.51$ ), importance (RIim:  $Z = -5.44$ ,  $p = .01$ ,  $r = -.52$ ), and intimacy (RIin:  $Z = -3.82$ ,  $p = .01$ ,  $r = -.36$ ).

In Survival setting, HsNg individuals registered higher values of services (Ss:  $Z = -4.74$ ,  $p = .01$ ,  $r = -.45$ ) information (Sif:  $Z = -4.39$ ,  $p = .01$ ,  $r = -.42$ ), and importance (Sim:  $Z = -4.36$ ,  $p = .01$ ,  $r = -.42$ ) exchanged resources. In Enjoyment setting, HsNg participants show greater goods (Eg:  $Z = -4.25$ ,  $p = .01$ ,  $r = -.41$ ), information (Ein:  $Z = -4.53$ ,  $p = .01$ ,  $r = -.43$ ), importance (Eim:  $Z = -4.47$ ,  $p = .01$ ,  $r = -.43$ ), and intimacy (Ein:  $Z = -4.10$ ,  $p = .01$ ,  $r = -.39$ ) contents of relationships. HsNg compared to control group show lower indexes of goods in survival setting

(Sg:  $Z = -4.30$ ,  $p = .01$ ,  $r = -.41$ ) and money in enjoyment setting (Em:  $Z = -4.03$ ,  $p = .01$ ,  $r = -.38$ ) contents of relationships.

**Table 5.5.1. Comparison between RC-Ecomap (2010) indexes (settings, contexts, and resources) of subjects with high scores to Narcissism Scale (n = 50) and controls (n = 60).**

RC-Ecomap Indexes**	Mean Rank		Mann-Whitney U	Z	p	r* = Z / $\sqrt{(m+n)}$
	High Narcissim score	Controls				
Slh	61.38	50.60	1206.00	-1.81	.07	-.17
Slw	53.06	57.53	1378.00	-0.75	.45	
Sls	61.18	50.77	1216.00	-1.76	.08	-.17
Sle	69.48	43.85	801.00	-4.25	.01	<b>-.41</b>
Clh	62.97	49.28	1126.50	-2.24	.02	-.21
Clw	61.68	50.35	1191.00	-1.86	.06	-.18
Cls	67.82	45.23	884.00	-3.70	.01	<b>-.35</b>
Cle	68.58	44.60	846.00	-3.93	.01	<b>-.37</b>
Rlm	52.90	57.67	1370.00	-0.78	.44	
Rlg	64.82	47.73	1034.00	-2.80	.01	-.27
Rls	59.49	52.18	1300.50	-1.20	.23	-.11
Rlif	73.49	40.51	600.50	-5.40	.01	<b>-.51</b>
Rlim	73.62	40.40	594.00	-5.44	.01	<b>-.52</b>
Rlin	68.23	44.89	863.50	-3.82	.01	<b>-.36</b>

\*\* Effect size:  $.01 \leq r < .30$  small;  $.30 \leq r < .50$  **medium**;  $r \geq .50$  **large**.  $r < .10$ : Not showed.

\*\* **Slh** = Home Setting index; **Slw** = Work Setting index, **Sls** = Survival Setting index; **Sle** = Enjoyment Setting index. **Clh** = Home Context index; **Clw** = Work Context index, **Cls** = Survival Context index; **Cle** = Enjoyment Context index. **Rlm** = money content index; **Rlg** = goods content index; **Rls** = services content index; **Rlif** = information content index; **Rlim** = importance content index, **Rlin** = intimacy content index.

LsNg participants compared to controls evidenced greater indexes of relationship

**Table 5.5.2. Comparison between RC-Ecomap (2010) indexes settings\*resources of subjects with high scores to Narcissism Scale (n = 50) and controls (n = 60).**

RC-Ecomap Indexes**	Mean Rank		Mann-Whitney U	Z	p	r* = Z / $\sqrt{(m+n)}$
	High Narcissism score	Control				
Hm	52.33	58.14	1341.50	-0.95	.34	
Hg	63.95	48.46	1077.50	-2.54	.01	-.24
Hs	65.28	47.35	1011.00	-2.94	.01	-.28
Hif	67.60	45.42	895.00	-3.63	.01	<b>-.35</b>
Him	64.80	47.75	1035.00	-2.79	.01	-.27
Hin	61.94	50.13	1178.00	-1.93	.05	-.18
Wm	47.55	62.13	1102.50	-2.70	.01	-.26
Wg	56.53	54.64	1448.50	-0.32	.75	
Ws	54.91	55.99	1470.50	-0.18	.86	
Wif	64.35	48.13	1057.50	-2.66	.01	-.25
Wim	64.05	48.38	1072.50	-2.57	.01	-.24
Win	61.08	50.85	1221.00	-1.68	.09	-.16
Sm	65.36	47.28	1007.00	-2.97	.01	-.28
Sg	41.70	67.00	810.00	-4.30	.01	<b>-.41</b>
Ss	71.28	42.35	711.00	-4.74	.01	<b>-.45</b>
Sif	70.11	43.33	769.50	-4.39	.01	<b>-.42</b>
Sim	70.00	43.42	775.00	-4.36	.01	<b>-.42</b>
Sin	60.78	51.10	1236.00	-1.61	.11	-.15
Em	43.05	65.88	877.50	-4.03	.01	<b>-.38</b>
Eg	69.64	43.72	793.00	-4.25	.01	<b>-.41</b>
Es	50.29	59.84	1239.50	-1.57	.12	-.15
Eif	70.60	42.92	745.00	-4.53	.01	<b>-.43</b>
Eim	70.39	43.09	755.50	-4.47	.01	<b>-.43</b>
Ein	69.17	44.11	816.50	-4.10	.01	<b>-.39</b>

\* Effect size:  $.01 \leq r < .30$  small;  $.30 \leq r < .50$  **medium**;  $r \geq .50$  **large**.  $r < .10$ : Not showed.

\*\* Setting (**H** = home; **W** = work; **S** = survival; **E** = Enjoyment) \* Resources (**m** = money; **g** = goods; **s** = services; **if** = information; **im** = importance; **in** = intimacy). E.g. Hm = money (m) exchanged in home setting (H).

contents of information, importance, and intimacy (Table 5.5.3 and 5.5.4).

**Table 5.5.3. Comparison between RC-Ecomap (2010) indexes (settings, contexts, and resources) of subjects with low scores to Narcissism Scale (n = 50) and controls (n = 60).**

RC-Ecomap Indexes**	Mean Rank		Mann-Whitney U	Z	p	r* = Z / $\sqrt{(m+n)}$
	Low Narcissism score	Controls				
Slh	63.14	49.13	1118.00	-2.34	.02	-.22
Slw	52.89	57.68	1369.50	-0.80	.42	
Sls	56.98	54.27	1426.00	-0.46	.65	
Sle	63.92	48.48	1079.00	-2.57	.01	-.24
Clh	61.67	50.36	1191.50	-1.85	.06	-.18
Clw	59.92	51.82	1279.00	-1.33	.18	-.13
Cls	63.94	48.47	1078.00	-2.53	.01	-.24
Cle	65.77	46.94	986.50	-3.08	.01	-.29
Rlm	47.23	62.39	1086.50	-2.48	.01	-.24
Rlg	62.64	49.55	1143.00	-2.14	.03	-.20
Rls	62.83	49.39	1133.50	-2.20	.03	-.21
Rlif	68.93	44.31	828.50	-4.03	.01	<b>-.38</b>
Rlim	68.40	44.75	855.00	-3.87	.01	<b>-.37</b>
Rlin	66.42	46.40	954.00	-3.28	.01	<b>-.31</b>

\* Effect size: .01 ≤ r < .30 small; .30 ≤ r < .50 **medium**; r ≥ .50 **large**. r < .10: Not showed.

\*\* **Slh** = Home Setting index; **Slw** = Work Setting index, **Sls** = Survival Setting index; **Sle** = Enjoyment Setting index. **Clh** = Home Context index; **Clw** = Work Context index, **Cls** = Survival Context index; **Cle** = Enjoyment Context index; **Rlm** = money content index; **Rlg** = goods content index; **Rls** = services content index; **Rlif** = information content index; **Rlim** = importance content index; **Rlin** = intimacy content index.

**Table 5.5.4. Comparison between Mean Rank of RC-Ecomap (2010) indexes (settings\*resources) of subjects with low scores to Narcissism Scale (n = 50) and controls (n = 60).**

Indexes*	Low Narcissism	Control	Mann-Whitney U	Z	p	r* = Z / $\sqrt{(m+n)}$
Hm	50.69	59.51	1259.50	-1.45	.15	-.14
Hg	62.64	49.55	1143.00	-2.14	.03	-.20
Hs	64.69	47.84	1040.50	-2.76	.01	-.26
Hif	65.22	47.40	1014.00	-2.92	.01	-.28
Him	63.73	48.64	1088.50	-2.47	.01	-.24
Hin	62.19	49.93	1165.50	-2.01	.04	-.19
Wm	43.18	65.77	884.00	-4.36	.01	<b>-.42</b>
Wg	52.78	57.77	1364.00	-0.84	.40	
Ws	56.68	54.52	1441.00	-0.35	.72	
Wif	62.56	49.62	1147.00	-2.12	.03	-.20
Wim	61.21	50.74	1214.50	-1.71	.09	-.16
Win	57.07	54.19	1421.50	-0.47	.64	
Sm	61.00	50.92	1225.00	-1.66	.10	-.16
Sg	40.49	68.01	749.50	-4.72	.01	<b>-.45</b>
Ss	71.32	42.32	709.00	-4.75	.01	<b>-.45</b>
Sif	66.26	46.53	962.00	-3.23	.01	<b>-.31</b>
Sim	67.14	45.80	918.00	-3.50	.01	<b>-.33</b>
Sin	60.13	51.64	1268.50	-1.41	.16	-.13
Em	41.14	67.47	782.00	-4.76	.01	<b>-.45</b>
Eg	68.84	44.38	833.00	-4.01	.01	<b>-.38</b>
Es	54.77	56.11	1463.50	-0.22	.83	
Eif	67.75	45.29	887.50	-3.68	.01	<b>-.35</b>
Eim	67.93	45.14	878.50	-3.73	.01	<b>-.36</b>
Ein	68.71	44.49	839.50	-3.97	.01	<b>-.38</b>

\* Effect size: .01 < r < .30 small; .30 < r < .50 **medium**; r > .50 **large**. r < .10: Not showed.

\*\* Setting (**H** = home; **W** = work; **S** = survival; **E** = Enjoyment) \* Resources (**m** = money; **g** = goods; **s** = services; **if** = information; **im** = importance; **in** = intimacy). E.g. Hm = money (m) exchanged in home setting (H).

Higher values of indexes were found in comparisons of services (Ss:  $Z = -4.75$ ,  $p = .01$ ,  $r = -.45$ ), information (Sif:  $Z = -3.23$ ,  $p = .01$ ,  $r = -.31$ ), importance (Sim:  $Z = -3.50$ ,  $p = .01$ ,  $r = -.33$ ) contents of Survival relationships, as goods (Eg:  $Z = -4.01$ ,  $p = .01$ ,  $r = -.38$ ), information (Eif:  $Z = -3.68$ ,  $p = .01$ ,  $r = -.35$ ), importance (Eim:  $Z = -3.73$ ,  $p = .01$ ,  $r = -.36$ ) and intimacy (Ein:  $Z = -3.97$ ,  $p = .01$ ,  $r = -.38$ ) contents of Enjoyment relationships.

LsNg participants, compared to controls show lower significant values of goods index in survival setting (Sg:  $Z = -4.72$ ,  $p = .01$ ,  $r = -.45$ ), money index in enjoyment setting (Em:  $Z = -4.76$ ,  $p = .01$ ,  $r = -.45$ ), as HsNg subjects as, and money index in work setting (Wm:  $Z = -4.36$ ,  $p = .01$ ,  $r = -.42$ ).

### *Discussion and Conclusion*

Results confirm the research hypothesis: Non clinical individuals with high and low attitude to Narcissism behaviors show generally greater RC-Ecomap indexes than controls. They have more relational contacts in Enjoyment setting and have a higher perception of the relational context than control. Differences in contents of goods, information, and importance are congruent with the considered Narcissism trait. An interesting fact is the parallelism of results between the two groups studied: High and Low attitude to Narcissism. Results suggest individuals of the two studied groups, have the same needs of confirms from relational network.

Results evidence predictive and differential validity of RC-Ecomap.

## CHAPTER 6

### Conclusion: RC-Ecomap, a valid and reliable tool to assess intimate relationships for practice and research

RC-Ecomap applications have been presented to show practical use, psychometric properties, reliability and validity evidences of the tool.

RC-Ecomap idiographic applications to an individual, a couple and a family have confirmed usefulness of ecological map representation to identify social network resources, potential sources of support, functional or dysfunctional relationships. In addition, the instrument has shown the usefulness of assigning quantitative weights, with its statistical significance, to the ecological factors examined. The practical use of RC-Ecomap has highlighted its power to change. The participants declared their surprise in doing an exercise that had never done: Make an effort to describe the network of relationships. They affirmed that filling RC-Ecomap helped them to become aware of the limits of their relational resources. The congruencies of RC-Ecomap evaluations with clinical observations represent evidences of “face validity.” Practical use has evidenced that Individual RC-Ecomap utilization is more useful than Couple or Family form: Data maintain their peculiarity and Individual RC-Ecomaps can be compared within a couple or a family. Processing data at a Couple or Family level, gives finding more general.

Reliability and validity properties of RC-Ecomap have been checked by utilizing the tool according to a nomothetic approach, with administrations to groups of participants. Two version of the instrument have been proposed, Italian and Spanish version. Two study researches conducted with non clinical populations in Italy and Spain have shown psychometric properties of the instrument. Most of the defined categorical variables have an approximate bell shaped distribution and show reliability. Evidence of concurrent validity for the instrument, emerges from the statistically significant correlations – even if low correlation values are found with small and medium effect sizes – between RC-Ecomap Indexes and the Chabot Emotional Differentiation Scale (Chabot & Licht, 2006), the Fear of Intimacy Scale (Descutner & Thelen, 1991; Doi & Thelen, 1993), the Anxiety about Transition (Manzi, Vignoles, Regalia, & Scabini, 2006), the Relational Awareness Scale (Colesso & Cusinato, 2011), the Center for Epidemiologic Studies Depression Scale (Radloff, 1977), the Satisfaction with Life Scale (Diener, Emmous, Larse, & Griffin, 1985), the Rosenberg Self-Esteem Scale (Rosenberg, 1965), the Multidimensional Scale of Perceived Social Support

(Zimet, Dahlen, Zimet, & Farley (1988), and the Perceived Parental Relational Style Questionnaire (Colesso, 2006).

Three studies conducted with comparisons between clinical participants (Parents of institutionalized psychotics, alcoholic attending a rehabilitative program, and individuals with high and low scores to a Narcissism scale) and controls, evidence predictive and differential validity properties of RC-Ecomap, as well as provide interesting findings on relational competences of the three clinical groups studied.

The results suggest that RC-Ecomap is a valid and reliable tool to assess intimate relationship, emphasizing its bridge function between in clinical practice and research.

But more research is needed with more extensive and balanced group of non-clinical participants, especially in the Spanish context, and with other clinical groups. In particular may be useful to verify the test-retest reliability.

The gained experience utilizing RC-Ecomap at Padua and Seville Universities, with students, researchers and clinical professionals, tells us it is an articulated and complex instrument: It's adequate for research; but its utilization may be difficult in clinical practice due to idiographic data analysis and the high number of variables to deal with (38!!!). Future efforts will be aimed to simplify the instrument for its clinical use, by identifying clinical variables of interest and by making easier the analysis of data at the idiographic level.

## About RC-Ecomap frame work: Among General Systems Theory, Ecology, and Emergent Interactionism

The traditional eco-map was built on the basis of the General Systems Theory (Bertalanffy, 1950) to produce diagrammatic representations of the interactions between individual (or family) and the environment that encompass the individual: the traditional ecological map is an “ecological” instrument by definition.

RC-Ecomap has been created from the elements of the traditional Ecomap. It’s a new representation of the ecological connections between individual (couple or family) and its environment, using models of the Relational Competence Theory (RCT, L’Abate, 2005): *Model*<sup>3</sup>, Socialization Settings for Relational Competences (Setting – Context); *Model*<sup>7</sup>, The Triangle of Living (Being – Doing – Having); *Model*<sup>11</sup>, Selfhood (The sense of importance attributed with the Self and the intimate others); *Model*<sup>12</sup>, Priorities (Survival and Enjoyment); and *Model*<sup>15</sup>, Intimacy.

Might arise the question if RC-Ecomap is still an “ecological map”: The answer is affirmative because the tool produces an ecological representation of relationships with intimates, supported with statistical analysis, to give back to the participant, and to complete the assessment process (Keefe, Kopel, & Gordon, 1978).

The utilization of RCT models, introduces the Setting, Context, contents of relationships concepts and variables. In the ecological representations are introduced elements of the other intimates in relation with the self (perceived other interest for the relationships) and elements of the self in relation with intimates (Self interest for relationships). These new aspects promote RC-Ecomap as an Interactionist tool, or better, an instrument of the *Produced Interactionism Spontaneus* paradigm (Colesso, 2011): The human behavior is an elaborative process cannot be understood in terms of mechanical responses to external influences. Nor can it be fully understood as the mere expression of pre-established inclinations or meanings held by the actor. The behavior emerges between individuals may be an unexpected, unpredictable emergent constructed in the thought processes of the actor. It’s influenced from external stimulus and let some degree of choice in the conduct. This Frame work justifies RC-Ecomap as a clinical tool to promote functional social network changes.

## CHAPTER 8.

### A proposal for RC-Ecomap training program

Besides creating and validating a new instrument, The Project RC-Ecomap contemplated the proposal of the instrument to students of the University of Padua (Italy) and Seville (Spain) by seminars. The training experience achieved in the last two years, has permitted to create a training program on RC-Ecomap. The final program has been used in a RC-Ecomap training Seminary-Conference for professionals and researchers. The event took place in Padua University, in October 2010. The following is the program.

#### ***Title***

RC-Ecomap for individuals, couples and families. A tool for the assessment of relational resources.

#### ***Preview***

Genogram and Ecomap are the classic tools that literature proposes as basic tools for the assessment of family relationships. While the first instrument has been consolidated over the years both from a theoretical point of view and application, the second hasn't developed a conceptual framework and a standardized methodology for application. A five-year exploratory research on theoretical and empirical aspects of ecological maps has permitted to develop a proposal for a new ecological map. It combines theoretical rigor, standardized procedures, qualitative and quantitative analysis with the benefit of statistical significance

This program represents an innovative proposal for the use of an Ecomap which utilizes models and dimensions derived by Relational Competence Theory (L'Abate, 1995, 2000, 2005) and allows the analyses of data through Log-linear models and classical testing at different levels obtaining indexes and parameters justified by statistical significance.

#### ***Aims***

To enable operators to the use of psychosocial RC-Ecomap, a new tool for the assessment of relational resources for individuals, couples and families.

#### ***Target***

Psychologists, Social Workers, Professional Educators, and Health Care Assistants.

## ***Program contents***

1. The traditional Eco-map: Study researches, representations, practical and theoretical limits.
2. A proposal to overcome the limits of classic Ecomap: RC-Ecomap. Its theoretical models.
3. The construction of RC-Ecomap: administration, data entry, calculation of the indices, data analysis, the drawing of the RC-Ecomap for restitution, interpretation of results.
4. Tutorial individual assisted in building a RC-Ecomap for the assessment of a clinical case.
5. The use of RC-Ecomap in a clinical setting.
6. The use of RC-Ecomap for research.

## ***Program***

Preliminary administration of the RC-Ecomap Answer Sheet to all participants.

### *1. The classic Ecomap: Study researches, representations, practical and theoretical limits*

#### I. Ecomap is an Ecological Map:

(a) Since Lewin (1935) conceptions of psychological settings and/or modalities for studying the relationship between behavior and environment have multiplied to constitute the Ecological Paradigm.

(b) This Paradigm is a conceptual orientation, a perspective resulting from the synthesis of contributions by many authors: Kelly (1966, 1990), Conoley & Haynes (1992), Seidman (1988), Bronfenbrenner (1979), Foa & Foa (1974).

(c) The ecological paradigm suggested the use of an Ecomap as a tool for assessing individuals, couples, and families (Hartman, 1995).

#### II. Ecomap is an assessment tool:

(a) The Ecomap monitors elements of human ecology that represent our intimate relationships and the social systems created by individuals willing to interact more effectively with both the physical and the social environment they live and work in.

(b) Several editions of the Ecomap have been proposed (Calix, 2004; Carpenter-Aeby, Aeby, & Boyd, 2007; Early, Smith, Todd, & Beem, 2000; Hodge, 2000; Ray & Street, 2005) according to different objectives and observational levels.

(c) *Discussion of a traditional Ecomap with RC-Ecomap training participants.*

(d) All these contributions remain within the exclusive range of qualitative evaluations by graphical representation. No convergent uniformity has been reached.

(e) The disadvantages of the Ecomap (Calix, 2004): Inadequate or inexact terminology that makes it difficult to determine the exact nature of the relationships; no data about its reliability and validity.

## *2. A proposal to overcome the limits of classic Ecomap: RC-Ecomap.*

### *Its theoretical models*

(a) The lack of an agreed upon the theoretical base for the conceptualization of settings, contexts and relational exchanges, makes it complex to determine the dimensions of a social network, facilitating the diffusion/proliferation of methodologies not always sustained by a sufficient theoretical clarity (Prezza & Principiato, 2002).

(b) Our new proposal allows to: (I) identify an acceptable/exhaustive conceptual framework within Environmental Relational Theory; (II) Operazionalize constructs as emerged by Ecomap information and justify by the literature.

(c) Relational Competence Theory (L'Abate, 1995, 2000, 2005) proposes precisely operazionalized models for: (I) Settings: objective (Model<sup>3</sup>) and subjective (Model<sup>1</sup>); (II) Resources and Modalities (Model<sup>7</sup>); (III) Priorities (Model<sup>12</sup>).

Specifically the RC-Ecomap uses the following constructs derived from Relational Competence Theory (L'Abate, 1995, 2000, 2005): (I) **settings**: *home, work, survival, and enjoyment*; (II) **relationships** evaluated within each setting according to the dimensions of *frequency, Self interest for relationship, and perceived interest of the other for relationship*. (III) **Contents of relationships**: Resources: *money, goods, services, information, importance, and intimacy*; Modalities: *Being* (importance + intimacy), *Doing* (information + services), and *Having* (goods + money); Relational orientations: *Power* (Doing + Having), and *Presence* (Being).

## *3. The construction of RC-Ecomap: administration, data entry, calculation of the indices, data analysis, the drawing of the RC-Ecomap for restitution, interpretation of results*

RC-Ecomap process includes the following phases:

(a) Administration;

(b) Recording the subject's answers;

- (c) Calculation of RC-Ecomap indexes;
- (d) Processing indexes with idiographic analysis (log-linear models) – for practical use – or nomothetic analysis (no parametric testing) – for research utilization;
- (e) Graphically representing the subject relational network for diagnosis and/or intervention.

#### *4. Tutorial individual assisted in building a RC-Ecomap for the assessment of a clinical case*

Participants will take exercise on RC-Ecomap processing on own RC-Ecomap Sheet of Recording Data.

#### *5. The use of RC-Ecomap in a clinical setting*

Participants will take exercise for groups on RC-Ecomap processing of an assigned clinical RC-Ecomap Answer Sheet, equipped of clinical information. Results will be discussed among all participants.

#### *6. The use of RC-Ecomap for research*

Presentation of nomothetic utilization of RC-Ecomap:

- (a) Study research with no clinical population to evidence reliability, internal and concurrent validity;
- (b) Comparison research between parents of psychotics and control.
- (c) Study research to compare alcoholics attending a rehabilitative program with control group control;
- (d) Study research on RC-Ecomap characteristics of individual with high and low scores to a Narcissism scale compared to controls in order to show predictive and concurrent validity of RC-Ecomap.

## ***Conclusions concerning the proposed RC-Ecomap training program***

The gained experience in RC-Ecomap training programs at Padua and Seville Universities tells us clinical professionals and researchers show interest for the proposal but have difficulties in dealing with Log-linear analysis. So I thought we may overcome this obstacle with a dedicated to RC-Ecomap calculation program, where administer could insert data of Answer Sheet and program give an output of RC-Ecomap indexes with the relative probability values.

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Note:

<sup>(1)</sup> Proper names and references that would lead to the identification of people have changed. This remark applies to all cases reported.