

Social Psychology and the Narrative Economy

Andrzej Nowak, Marta Kacprzyk-Murawska, and Ewa Serwotka

Abstract Economics can benefit through adopting various ideas from social psychology. Social and economic processes can be analysed at different levels: the microlevel (individuals), mesolevel (system structures), and macrolevel (whole socioeconomic system). Contrary to classic economic models, when making decisions, people do not consider all available information at the microlevel—this is not possible. Decisions may have many competing dimensions and there may be no single optimum. Whereas in traditional economy the main difference between the levels is the degree of aggregation, *social constructionism* studies how individuals cooperatively create, change and maintain their understanding of the world. Meanings arise as a result of coordinated action of humans who interpret their world by building models of it and how it functions. A natural way of acquiring meanings and conveying them to others is through *narratives*—stories that have a beginning, a body, and an end. Narratives exist at all levels of social reality. They provide the structure by which an individual can understand the world, with their roles in narratives individuals suggesting how to behave. Interacting individuals socially construct narratives bottom-up. Group narratives emerge from integration of stories describing individual experiences of actors. Shared narratives allow actors to find commonality in their experiences, find coherence in the flow of events and allow them to coordinate in common actions. At the macrolevel narratives define the system and its common culture. Sometimes narration may have more impact on an economy than hard data. Even the choice of which facts we refer to and those we do not may determine the leading narrative and hence the behaviour of people. Socio-economic processes can and should be analysed in line with narratives linking individuals, organisations and societies to better understand what is happening in the whole economic system.

A. Nowak (✉) • M. Kacprzyk-Murawska • E. Serwotka
Department of Psychology, University of Warsaw, ul. Stawki 5/7, Warsaw 00-183, Poland
e-mail: andrzejn232@gmail.com

© The Author(s) 2017
J. Johnson et al. (eds.), *Non-Equilibrium Social Science and Policy*,
Understanding Complex Systems, DOI 10.1007/978-3-319-42424-8_3

1 Introduction

In the traditional approach to economy models of *rational choice* describe individual decisions, where it is assumed that each individual makes decisions independently of the others, maximising his or her utility. It is also assumed that choices of individuals can be summed at higher levels of aggregation, with the laws operating on the group and societal levels being directly derived from the rules that govern individual behaviour. A further assumption, that economic systems are at equilibrium, underlies the formal orthodox descriptions of the properties of economic systems.

Recent empirical research has challenged the theoretical assumptions of classical economic theory, while the inability of these theories to predict the economic crisis of 2008 has called into question the practical utility of equilibrium-based economic theories. Although useful as a ‘thinking tool’, traditional models of economy need to be open to knowledge derived from other scientific disciplines.

In this chapter we will focus on how economics can benefit through adopting various ideas from social psychology. We will explore the view that economic processes are in fact emergent social phenomena where the dynamics of group processes drive market dynamics [1]. We will argue that because most social phenomena cannot be well described by the concept of equilibrium we need to go beyond the concept of equilibrium to understand market dynamics. We will pay special attention to the *constructivist* view [5], which states that social reality is constructed and maintained in the interactions among individuals. We will consider how social and economic reality, especially its symbolic level, is constructed by narratives [13].

We argue that economy is driven to a large part by psychological and social dynamics and examine the mechanisms by which processes operating at the level of individual and social group affect economic processes. First we will discuss different levels of the system showing how social phenomena interplay between micro-, meso- and macro-levels, then we will describe the *new agent* whose behaviour is far more complex than traditional economy assumes, and finally we will elaborate on the notion of *narrations* and how they may influence economic systems.

2 Levels of the System

It is clear that social and economic processes can be analysed at different levels: microlevel corresponding to individuals, mesolevel representing the structures of the system, and the macrolevel being the whole socioeconomic system [10, 11]. In traditional economy it is assumed that the main difference between the levels is in the degree of aggregation. Phenomena at mesolevel represent the summation of individual processes, and the macro-level phenomena represent aggregation of phenomena happening at the lower levels. According to this view the same rules

operate at each level, and the levels differ mainly in the degree of aggregation. For example, individuals maximise utility in their decision-making, social groups maximise utility as the sum of the individual utilities, and this sums to the optimisation of the utility at the system level.

In reality, however, processes occurring at each of the levels are very different. For example, individuals' attempts to maximise the utility of their decisions at the microlevel can result in groups reaching poor outcomes at the mesolevel when the interdependence between individual decisions resembles the prisoner's dilemma [45]. Processes occurring at different levels are different from each other and are governed by different laws. Processes at different levels can interact with each other, and there is constant feedback between all levels [43] due to processes at one level influencing and modifying processes at other levels.

The levels of social reality differ not only structurally, but also in terms of content, and types of processes that occur at each level. At the individual level individuals are represented as agents. They take decisions, but also they experience emotions, remember events, have opinions and attitudes, have multiple values and goals, perform actions, and are subject to social norms. In fact, a variety of psychological processes occur at the individual level. Knowing the unrealistic assumptions of the rational choice model, [25] proposed their famous *prospect theory* where the description of the decision making process takes into account psychological factors such as risk aversion, e.g. people gain and lose weight differently (Pratt, 1964). Social psychology gives also evidence that people often make choices based on emotions and not cold calculation [9, 63].

3 The Myth of Rational Decision Making at the Microlevel

Contrary to classic economic models, when making decisions, people do not consider all available information, but are subject to *cognitive closure* [28]. Even if at first individuals are open to new information, when they make a decision this openness disappears and is replaced by selective searching only for information to support their decision, with any contradictory information being dismissed. Research also shows that people are vulnerable to psychological biases affecting their assessment of situations and influencing their economic behaviour. Broadly described in the literature (e.g. [15, 26, 61]) are following the biases:

- *anchoring*—when making decisions, people tend to rely too heavily on one piece of information, even if it is not the most relevant
- *framing*—people make different choices depending on how a dilemma is presented to them
- *wishful thinking*—people have an unrealistically positive view of their situation and abilities
- *self-attribution*—people tend to take credit for successful events, while blaming external factors such as 'bad luck' for any shortcomings or failures

to name but a few. Research in social psychology has shown that people do not act according to the rational choice model, but rather base their decisions on *schema* (e.g. [3, 48]).

For example, children working as street vendors in Brazil, who can ably calculate using money when selling goods on the local street, are unable to repeat the same arithmetic operations on abstract numbers when asked in a laboratory environment [7].

In traditional economic thinking humans are perceived as entities trying hard to maximise their outcomes defined in terms of expected value. However, when making a decision, people often do not want to maximise their outcomes only in one dimension, but are interested to reach the maximum outcome in many various fields. Herbert Simon calls this *satisficing* where outcomes on qualitatively different dimensions have to be traded off against each other [51]. For example, when buying car individuals may want a convenient and reliable means of transport at the lowest possible cost while trying to win popularity among their friends or attract new partners by having a car at the highest possible cost. Buying an inexpensive car is irrational on the popularity dimension while buying an expensive car is irrational on the transport dimension. A compromise of buying a medium price car could be irrational on both dimensions. Hence decisions that seem irrational from the perspective of one goal may turn out to be very rational if only we take other goals into account.

Furthermore, many times people do not make any decisions at all, but simply copy decisions of others, making the dynamics at the microlevel even more difficult to capture [4].

All the above processes take place at microlevel [27], with consequences that shape the whole system at higher levels. Realistic representation of the agents is the basis for understanding how social economic systems work. Agents are connected by social relations to other agents, and they belong to groups and organisations. This gives rise to structures at the mesolevel.

4 The Mesolevel

From the perspective of Non-Equilibrium Social Science (NESS), the mesolevel is the most interesting, since it determines the relationship between micro and macro. The mesolevel is blurry, changing and heterogeneous. In fact, it is an agglomerate of various kinds of very different structures. It is composed, first of all, of formal structures like firms, organisations, associations, etc. It also contains informal structures like friendship circles or coalitions. It involves not only stable social structures, but also intermittent ones, which exist only for a short time such as meetings and gatherings, temporary alliances, etc. The mesolevel can be characterised not only by the social structures it contains, but also by different types of content and processes that exist at this level. Social groups have identities, and these identities have strong influence on how they behave [53]. Social groups

converge on their view of reality, and their shared reality is the platform for group action. Most typically, reality is understood in terms of narratives [41]. Narratives are constructed, circulated and evolve in social groups [17]. They decide not only how groups understand reality, but also which decisions groups make and which courses of action groups take [58].

5 The Macrolevel

Although the macro level, the level of the whole system, can be described in terms of its own rules, from the perspective of NESS, it is most revealing to analyse the macro-level in terms of the dynamics produced by the interaction of the entities present at lower levels of the system. The macrolevel is never exactly at the equilibrium [43]. It may oscillate around an equilibrium or fixed-point attractor, but sometimes it may jump abruptly between different attractors of the social system [8]. Moreover, the equilibria or attractors are not static but change in time. Instead of trying to characterise a system in terms of its stable equilibrium, the perspective of NESS suggests viewing the system at different timescales. For example individual sentiments may change on a fast time scale, while the system's attractors may change on a longer time scale. From this perspective the rules governing the system may not be stable. They result from the processes operating at the mesolevel, which are constantly evolving, and from properties of individuals which also change in time. Viewing societies and economies as multi-level systems allows us to go beyond characterizing the current state of the system to understand the complex dynamics composed of periods of relative stability, but also changes, which sometime are catastrophic in nature [29, 56].

6 The New Agent

An agent is connected, not isolated. An agent is connected by multidimensional links to other agents and many mesolevel structures. Relations of passing information, social influence and social interdependence connect an agent to his or her social context [57]. An agent often relies on others for getting information. Also individuals influence each other with respect to making opinions forming attitudes, etc. Although agents sometimes take decisions by processing information, comparing alternative courses of action and maximising expected outcomes, often they simply copy the decisions of others to whom they are connected by social relationships [4]. This is especially true in our complex modern world, where for most economic decisions the number of alternatives is far too high to evaluate them all. Often the nature of an agent's purchasing decision is that of whose choice to follow, rather than deciding which product best satisfies their needs. Social laws may thus better explain economic decisions, than cognitive rules. By copying, choices of

some individuals get multiplied which can result in cascades of adoption. Agent's choices change the payoff structure of other agents. This forms interdependence relations. Game theory focuses on analyzing social interdependence and decisions of dyads or groups of agents interconnected by interdependence relationships [30, 42]. The most famous type of interdependence is the prisoners' dilemma [45], but many other types of links have been investigated in the context of structures of interdependent decision makers [60].

Agents are heterogeneous in many aspects. They differ in their knowledge, position in social networks, values they try to maximise, social orientation (e.g. how cooperative or competitive they are), personality traits, etc. It is especially interesting how the dynamics of social and economic processes differ with respect to power, impact and narratives.

The behaviour of an agent is largely guided by the narratives they have adopted or created [58]. Agents strive for coherence with others to whom they are connected by relations, or with the mesolevel structures they are connected to [49]. Through mutual influences, agents form a shared reality that provides a mutually agreed upon social representation and evaluation of the world they live in. Since individuals tend to represent themselves and their surrounding world in the form of narrations, social representation usually takes the form of shared narratives.

Agents and their relationships change in time where some changes are due to the developmental process of maturation and ageing, but the changes are mainly the result of events and interactions [12]. Agents learn. Agent's past experiences and their own decisions influence their current decisions and behaviours. They acquire new information. They form new opinions, attitudes and identities [41]. Although maximisation in most theoretical approaches is the main principle that guides agent decision making, a crucial question is 'what does an agent maximise?' What are the goals and values of an agent? In most situations agents have multiple goals and different values guide their actions. Goals go far beyond monetary outcomes, are likely to involve social motives such as winning in competition, achieving higher status, strengthening friendship, or may be guided by empathy. Some values cannot be related to each other, e.g. what is the price of the life of one's child. Multiple goals, values and motives form multidimensional configurations. What influences individuals is not only the summary utility of all the goals that a choice will satisfy, but also the configuration of the ensemble. For example, individuals are more likely to choose courses of action that will satisfice all their goals, although other choices may lead to higher summed utility. Individuals also may avoid alternatives that lead to violation of important values or norms. There are reasons to believe that decisions are made not only on the basis of their outcomes, but also properties of the decision process. For example individuals may prefer choices made by a simpler or more coherent process, such as one that requires less cognitive effort, or one that avoids having to deal with conflicting values.

7 Narratives

Social constructionism studies how individuals cooperatively create, change and maintain their understanding of their world, and common knowledge of their reality [5, 16]. According to this theory meanings arise as a result of coordinated action of humans who interpret their world by building models of it and how it functions. Berger and Luckmann [5] state that any social order is an 'ongoing human production'. The main medium in this process of reality construction, negotiation and transmission is language [13]. Knowledge of reality is not inherent and given to people, but comes from and is reinforced by social interactions [19, 40, 46, 50, 59]. In order to persevere it has to be continuously reaffirmed.

Narratives are stories that have a beginning, a body, and an end. They have a plot. They describe temporal sequences of actions performed by agents and events and their consequences. Agents have roles, they try to achieve goals, have intentions and plans. They are connected by relations to other agents. Narratives may be simple or multithreaded, i.e. composed of interrelated simpler narrations.

Agents differ with respect to their relationship to narratives. Agents adopt narratives. Agents share narratives with other individuals in the social structure they belong to [5]. They attach their personal narratives to the narratives of the groups they belong to. They also change existing narratives and create new ones, usually in interactions with others, in a social process.

Narratives provide the structure by which individuals understand the world, in which they live. They tell individuals which elements and processes are related to each other, how to structure their experience, how to evaluate the other individuals, objects and processes. By knowing their roles in narratives individuals know how to behave [5]. Narratives also tell individuals how others are likely to behave. Narratives lead to actions and they are thus causally linked to behaviours.

Narratives exist at all the levels of social reality: micro, meso and macro. At the individual level they are an essential element of self-structure, telling an agent what is his or her identity, what are his or her relations and obligations to others, what are the expected actions of others, what is the meaning of an object action or event, and what actions should be performed [34, 44, 52]. They also inform the achievement of goals and the consequences of actions.

Narratives developed by individuals about themselves, where author of a narrative is also the foreground hero of it, are called *auto-narratives* [58]. Auto-narrative schemas determine the behaviour of individuals' social as well as economic actions, and influence the contents of narrative identity [33, 44, 52]. Special types of auto-narratives are simulations of the future, rich in scenarios for possible and desirable events. They can positively impact on the direction of attention and thinking, selectivity of the memory and subjective probability of implementation of plans [61]. These effects can increase an individuals' engagement in the realisation of a plan.

The 'meaning of life' created by narratives helps individuals better understand the mechanisms underlying their actions, thereby causing a greater sense of control

over the environment and their own life [54]. Actions are more organised and more effective [55]. This results in building willpower and maintaining goals and plans, even in difficult circumstances. It also helps implement long-term plans [20].

At the mesolevel the main role of narratives is the integration of elements into wholes capable of coherent action. They play a key role for building mesolevel structures and are platforms for coordination of collective actions [47]. Narratives are the primary tools for building collective identities [19, 23, 39]. Who are we? What are our values and goals? What are our norms? How do we act? How do we relate to each other? Who are our friends? Who are our enemies? What is our history? What is our future? What other objects are important to us? Narratives typically answer these questions. Narratives represent the main element of content existing at the mesolevel. They construct mesolevel entities. We are together, although we may be different, because we belong to the same story. Narratives define the culture of organisations.

Narratives also link events in networks. Successive events may be seen as related or unrelated, depending on the narrative in which they become embedded. Narratives also define which actions and events are connected by causal links, and thus provide a structure for prediction and goal achievement.

Narratives can also be created on purpose and transmitted in a top-down process by high-status actors with power and authority, as for example the mission statements of a company, or its official history. These represent the official narratives of an organisation. They serve the purpose of controlling the dynamics of the organisation and impose interpretations of the organisation both within and outside of the organisation.

Interacting individuals also socially construct narratives in a bottom-up process. Group narratives emerge from integration of stories describing individual experiences of actors. Shared narratives allow actors to find commonality in their experiences, find coherence in the flow of events and allow them to coordinate in common actions. Unofficial narratives are built in relation to the official narratives. They are either built in agreement with the official narratives, serving as their instantiations, or they are built in opposition to the official ones, rebelling against them.

At the macrolevel narratives define the system and its common culture. Lack of an adequate narrative for Europe is cited as one of the causes of its current weakness, and a cause of problems with EU integration [2]. Creating the common narrative for Portugal, in a poem 'Os Lusíadas', by Luis de Camoë has been seen as one of the main causes for the rise of Portugal as a nation separate from Spain. In Poland, the poetic narrations of the romantic poets Mickiewicz, Slowacki and Norwid are seen as one of the reasons why Poland was recreated by the efforts of its citizens after more than a 100 years of non-existence [22, 62].

Narratives have different sources. Each culture is built around some common narrative schema such as fairy tales, themes of books and movies, or passed across generations as family histories [18]. These narrative schemas provide the basic plot to specific narrations, *inter alia*, concerning work, economic injustice, wealth etc. In the USA, for example, the most common narrative story is 'an

actor achieved his or her goals despite great obstacles' [33]. This narrative schema shapes personal stories, is embodied in the plots of books and movies which in addition to telling a specific story also strengthen the narrative schema. It also influences behaviour, telling the actors that difficulties are to be expected, that they can be overcome by persistence, and that the goals can be achieved. Another US narrative schema is redemption [31–33, 35–38]. In this schema an actor, who initially has negative characteristics, is radically transformed by a person or an experience and achieves very positive characteristics. Robinson Crusoe and some of the novels by Jack London conveyed a narrative of early capitalism, showing how the actor becomes progressively richer by sustained hard work. Depending on which narratives dominate (be they secular or religious) in the given community, we can expect people to act according to them.

Narratives also emerge from shared experiences [6]. This is the bottom-up route to the formation of narratives. Actors share stories and relate them to each other. Similar stories merge into shared narrations providing a shared interpretation of common experiences. In this process, individuals may internalise experiences that never occurred to them and treat them as their own. Also, choices of individuals based on random factors (such as an exposure to a product) may become included in personal and subsequently group narratives and start to shape decisions and actions.

Narrative schemas, though their repetitions in narratives, provide a common ground for values and norms of a culture [17]. They also become schemas for the construction of personal narrations, which structure the experience of individuals. Adopting a narrative is quite different from learning about a narrative. In contrast to narratives that individuals 'just know about', adopted narratives guide emotional reactions, reasoning, and action. There are different levels of adopting a narrative. At the first level narratives become accepted or rejected. Deciding that a narrative describes reality moves it to a deeper level of acceptance. At a very deep level of adoption a narrative becomes included in a person's self-structure. It becomes a part of their personal identity, is used to structure and give meaning to personal experience and guides their decisions and actions [52]. The role an individual has, thanks to narrative, become a source of their identity and they enact this role in what they do.

Some narratives are easier to evolve and adopt than others. How easy it is to adopt a narrative depends both on the features of the narrative, on the social context in which it is passed and on the relations of the narrative to the culture of the narrative group, mostly the already existing narratives [14, 24]. Narratives that contain tension are more interesting and easier to pass on than boring narratives. Narratives that adhere to exiting narrative schema are better remembered and more easily accepted. Narratives emerging from bigger narrative communities are easier to adopt and evolve.

Narrative power, the power to edit and control narratives, is an important source of control in social processes. There are several mechanisms determining narrative power. Authority is an obvious source of narrative power [21]. Both societies and organisations have rules assigning power to modify narrations. In the extreme version it may involve a right to censor the narrations of others. Authority also

gives means for propagating narratives such as the control of the media or official communication channels. Reputation, often based on the history of producing successful narratives, is also an important source of narrative power.

The rise of the Internet and especially social media have to some degree decoupled narrative power from traditional authority. Companies, for example, feel that Internet reputation and recommendation systems dramatically decreased their power to control the narratives concerning their companies and products. In a similar vein, politicians in totalitarian countries are discovering that they have lost their monopoly for constructing shared narrations. The events of the Arab Spring clearly show how the loss of the monopoly for constructing shared narrations, which in this case was caused by social media, can lead to coordinated social action against the authorities.

Narrative power is related to the access to both official and unofficial communication channels, e.g. large personal networks, or high number Twitter followers. It is also related to credibility and trust. A related characteristic is the power to edit narratives. The capacity to capture attention is a major factor in the ability to create a popular narrative. The power to edit and change narratives is more related to credibility and trust. It is also the case that narratives define who has the power to edit narratives. Narratives establish reputation and credibility, such as to say who has the best judgment, who has firsthand knowledge, who is honest, etc. The power to edit narratives is critical for preventing damage to reputation caused by narratives.

One of the main questions for understanding social dynamics is how information is transformed into knowledge. Information by itself does not lead to action. For action, information needs to be transformed into knowledge. Narratives play a critical role in transforming information into knowledge by structuring it, placing it in context and linking it to prediction. For example, the Polish economy is one of the healthiest in Europe. It is the only economy in Europe that did not join the recent recession. Yet, most of the Polish population feel their economy is in a state of catastrophe and periodically there are massive demonstrations demanding the recall of the government and impeachment of the prime minister. Here the Polish opposition has succeeded in generating a narrative of failure [62]. In contrast, the case of Ireland provides a different story. Until the catastrophic crisis of 2008 economists and politicians in Europe believed that the Irish economy was sound, just because Ireland was Northern and Germanic. As another example, the government debt rates of Spain, Germany and Great Britain are very similar. However, the interest on these debts are vastly different, much lower in the case of Great Britain and Germany than in Spain. Clearly, opposite narratives can be built on the same information.

This raises two distinct sets of questions. The first is related to narratives. What is the relation between narratives and information? Under which circumstances and to what extent does information restrain building narratives? How does information facilitate, or hinder the propagation of narratives? The second set of questions is related to how to extract knowledge from information. It is based on the assumption that knowledge provides a basis for decision-making. How can information be transformed into knowledge? How can that knowledge be propagated? How can we

create knowledge? The capacity to turn information into useful, unbiased knowledge is one of the principal factors deciding the success of firms.

As we can see, sometimes narration may have more impact on an economy than hard data. Even the choice of which facts we refer to and those we do not may determine the leading narrative and hence the behaviour of people. In physical systems there is no meaning. In economics, we cannot afford the comfort of relying only on calculus as what is happening in the economy is happening in the world of meanings. Here the equilibrium models showing supply-demand balance are of no help (unless they are analysed as possible narratives). From the perspective of the NESS, socio-economic processes can and should be analysed in line with narratives linking individuals, organisations and societies to better understand what is happening in the whole economic system.

8 Conclusions

In conclusion, not only do social processes govern the dynamics of economic processes. They also determine a constructed social and economic reality, which is maintained and changed by the process of constructing shared reality. The dynamics of narrative play a major role in this. Social processes are not driven by equilibrium dynamics, and it follows that economic processes in a large part are non-equilibrium.

Open Access This chapter is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, duplication, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the work's Creative Commons license, unless indicated otherwise in the credit line; if such material is not included in the work's Creative Commons license and the respective action is not permitted by statutory regulation, users will need to obtain permission from the license holder to duplicate, adapt or reproduce the material.

References

1. Andersen, J., Nowak, A.: *Introduction to Socio-Finance*. Springer, New York (2014)
2. Armbruster, A., Rollo, C., Meinhof, U.H.: *Imagining Europe: everyday narratives in European border communities*. *J. Ethn. Migr. Stud.* **29**(5), 885–899 (2003)
3. Barlett, F.: *Remembering: A Study in Experimental and Social Psychology*. Cambridge University Press, London (1932)
4. Bentley, R.A., Ormerod, P., Batty, M.: *Evolving social influence in large populations*. *Behav. Ecol. Sociobiol.* **65**(3), 537–546 (2011)
5. Berger, P.L., Luckmann, T.: *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Anchor Books, Garden City, New York (1966)

6. Bruner, J.S.: *Acts of Meaning*. Harvard University Press, Cambridge, MA (1990)
7. Carraher, T.N., Carraher, D.W., Schliemann, A.D.: *Mathematics in the streets and in schools*. *Br. J. Dev. Psychol.* **3**, 21–29 (1985)
8. Coleman, P.T., Vallacher, R., Nowak, A., Bui-Wrzosinska, L.: Intractable conflict as an attractor: presenting a dynamical model of conflict, escalation, and intractability. *Am. Behav. Sci.* **50**(11), 1454–1475 (2007)
9. Damasio, A.R., Tranel, D., Damasio, H.C.: Somatic markers and the guidance of behavior: theory and preliminary testing. In: Levin, H.S., Eisenberg, H.M., Benton, A.L. (eds.) *Frontal Lobe Function and Dysfunction*, pp. 217–229. Oxford University Press, New York (1991)
10. Dopfer, K.: Evolutionary economics - framework for analysis. In: Dopfer, K. (ed.) *Evolutionary Economics: Program and Scope*. Kluwer, London (2001)
11. Dopfer, K.: Evolutionary economics - a theoretical framework. In: Dopfer, K. (ed.) *The Evolutionary Foundations of Economics*. Cambridge University Press, Cambridge (2004)
12. Elder, G.H.: The life course paradigm: social change and individual development. In: Moen, P., Elder, G.H., Luscher, K. (eds.) *Examining Lives in Context*, pp. 101–139. American Psychological Association, Washington, DC (1995)
13. Fisher, W.R.: Clarifying the narrative paradigm. *Commun. Monogr.* **59**, 55–58 (1989)
14. Fivush, R., Haden, C. (eds.): *Autobiographical Memory and the Construction of a Narrative Self*. Lawrence Erlbaum Associates, Mahwah, NJ (2003)
15. Fraser, J.M., Smith, P.J., Smith, J.W.: A catalog of errors. *Int. J. Man Mach. Stud.* **37**, 265–307 (1992)
16. Gergen, K.J.: The social constructionist movement in modern psychology. *Am. Psychol.* **40**, 266–275 (1985)
17. Gergen, K.J., Gergen, M.M.: Narratives of the self. In: Sarbin, T., Sheibe, K. (eds.) *Studies in Social Identities*. Praeger Press, New York (1983)
18. Gergen, K.J., Gergen, M.M.: Narrative form and the construction of the psychological science. In: Sarbin, T. (ed.) *Narrative Psychology: The Storied Nature of Human Conduct*, pp. 201–245. Praeger, New York (1986)
19. Goffman, E.: *The Presentation of Self in Everyday Life*, Anchor Books edition. University of Edinburgh Social Sciences Research Centre, Edinburgh (1959)
20. Gollwitzer, P.M.: The volitional benefits of planning. In: Gollwitzer, P.M., Bargh, J.A. (eds.) *The Psychology of Action: Linking Cognition and Motivation to Behavior*, pp. 287–312. Guilford, New York (1996)
21. Goodwin, C.: Notes on story structures and the organisation of participation. In: Atkinson, M., Heritage, J. (eds.) *Structures of Social Action*, pp. 225–246. Cambridge University Press, Cambridge (1984)
22. Grzybowski, K.: *Refleksje sceptyczne*, vol. 2. Książka i wiedza, Warszawa (1970)
23. Jenkins, R.: *Social Identity*. Routledge, New York (1996)
24. Josselson, R., Lieblich, A.: *The Narrative Study of Lives*. Sage, Thousand Oaks, CA (1993)
25. Kahneman, D., Tversky, A.: Prospect theory: an analysis of decisions under risk. *Econometrica* **47**, 313–327 (1979)
26. Kahneman, D., Slovic, P., Tversky, A. (eds.): *Judgement Under Uncertainty: Heuristics and Biases*. Cambridge University Press, Cambridge (1982)
27. Katona, G.: *Psychological Economics*. Elsevier, New York (1975)
28. Kruglanski, A.W., Webster, D.M.: Motivated closing of the mind: seizing and freezing. *Psychol. Rev.* **103**, 263–283 (1996)
29. Latane, B., Nowak, A.: Attitudes as catastrophes: from dimensions to categories with increasing involvement. In: Vallacher, R.R., Nowak, A. (eds.) *Dynamical Systems in Social Psychology*, pp. 219–249. Academic, San Diego (1994)
30. Luce, R.D., Raiffa, H.: *Games and Decisions: Introduction and Critical Survey*. Dover, New York (1989)
31. McAdams, D.P.: Generativity in midlife. In: Lachman, M. (ed.) *Handbook of Midlife Development*, pp. 395–443. Wiley, New York (2001)

32. McAdams, D.P.: Generativity and the narrative ecology of family life. In: Pratt, M.W., Fiese, B.H. (eds.) *Family Stories and the Life Course*, pp. 235–257. Lawrence Erlbaum Associates, Mahwah, NJ (2004)
33. McAdams, D.P.: *The Redemptive Self: Stories Americans Live By*. Oxford University Press, New York (2006)
34. McAdams, D.P.: The redemptive self: generativity and the stories americans live by. *Res. Hum. Dev.* **3**(2&3), 81–100 (2006)
35. McAdams, D.P., Bowman, P.J.: Narrating lifes turning points: redemption and contamination. In: McAdams, D.P., Josselson, R., Lieblich, A. (eds.) *Turns in the Road: Narrative Studies of Lives in Transition*, pp. 3–34. American Psychological Association, Washington, DC (2001)
36. McAdams, D.P., Ruetzel, K., Foley, J.M.: Complexity and generativity at midlife: a study of biographical scripts for the future. *J. Pers. Soc. Psychol.* **50**, 800–807 (1986)
37. McAdams, D.P., Diamond, A., de St. Aubin, E., Mansfield, E.: Stories of commitment: the psychosocial construction of generative lives. *J. Pers. Soc. Psychol.* **72**, 678–694 (1997)
38. McAdams, D.P., Reynolds, J., Lewis, M., Patten, A., Bowman, P.T.: When bad things turn good and good things turn bad: sequences of redemption and contamination in life narrative, and their relation to psychosocial adaptation in midlife and in students. *Personal. Soc. Psychol. Bull.* **27**, 472–483 (2001)
39. McCall, G., Simmons, J.: *Identities and Interactions*. Free Press, New York (1978)
40. Mead, G.H.: *Mind, Self, and Society*. University of Chicago Press, Chicago, IL (1934)
41. Neisser, U.: *Cognitive Psychology*. Appleton Century Craft, New York (1967)
42. Neumann, J.: Zur Theorie der Gesellschaftsspiele. *Math. Ann.* **100**(1), 295–320 (1928)
43. Nowak, A., Vallacher, R.R.: *Dynamical Social Psychology*. Guilford, New York (1998)
44. Polkinghorne, D.: Narrative and the self concept. *J. Narrat. Life Hist.* **1**, 135–153 (1991)
45. Rapoport, A., Chammah, A.M.: *Prisoners Dilemma*. University of Michigan Press, Ann Arbor (1965)
46. Ricoeur, P.: *Time and Narrative*. The University of Chicago Press, Chicago (1984). ISBN 0-226-71332-6
47. Sabrin, T.: The narrative quality of action. *J. Theor. Philos. Psychol.* **10**, 49–65 (1990)
48. Schank, R.C.: *Dynamic Memory*. Cambridge University Press, Cambridge (1982)
49. Schank, R.C., Abelson, R.P.: Knowledge and memory: the real story. In: Robert, S.W. Jr. (ed.) *Knowledge and Memory: The Real Story*, pp. 1–85. Lawrence Erlbaum Associates, Hillsdale (1995)
50. Sheler, M.: *Problems of a Sociology of Knowledge* (Trans. M.S. Frings). Routledge & Kegan Paul, London (1980)
51. Simon, H.A.: *The Sciences of the Artificial*. MIT, Cambridge, MA (1969)
52. Singer, J.L.: Narrative identity and meaning-making across the adult lifespan. *J. Pers.* **72**, 437–459 (2004)
53. Tajfel, H., Turner, J.C.: The social identity theory of intergroup behaviour. In: Worchel, S., Austin, W.G. (eds.) *Psychology of Intergroup Relations*, pp. 7–24. Nelson-Hall, Chicago, IL (1986)
54. Taylor, S.: Adjustment to threatening events: a theory of cognitive adaptation. *Am. Psychol.* **38**, 1161–1173 (1983)
55. Taylor, S., Pham, L.: Mental simulation, motivation and action. In: Gollwitzer, P.M., Bargh, J.A. (eds.) *The Psychology of Action: Linking Cognition and Motivation to Behavior*. Guilford, New York (1996)
56. Thom, R.: Structural stability, catastrophe theory, and applied mathematics. *Society for industrial applied. Math. Rev.* **19**(2), 189–201 (1977)
57. Trzebiński, J.: Narracyjne formy wiedzy potocznej. Wyd. Nakom, Poznań (1992)
58. Trzebiński, J.: Autonarracje nadają kształt życiu człowieka. In: Trzebiński, J. (ed.) *Narracja jako sposób rozumienia świata*. Gdańskie Wydawnictwo Psychologiczne, Gdańsk (2002)
59. Turner, J.H.: *The Structure of Sociological Theory*, 5th edn. Wadsworth, Belmont, CA (1991)
60. Turocky, T.L., Stengel, B.: *Game Theory*. Encyclopedia of Information Systems. Academic, New York (2002)

61. Tversky, A., Kahneman, D.: Judgement under uncertainty: heuristics and biases. *Sciences* **185**(4157), 1124–1131 (1974)
62. Wasilewski, J.: *Opowieści o Polsce. Retoryka narracji*. Headmade, Warszawa (2012)
63. Zajonc, R.: Feeling and thinking: preferences need no inferences. *Am. Psychol.* **35**, 151–175 (1980)