EFESEIIS

Enabling the Flourishing and Evolution of Social Entrepreneurship for Innovative and Inclusive Societies

Evolutionary theory of social enterprise

On the use of evolutionary concepts in the field of social entrepreneurship

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Introduction

In the EFESEIIS project we see social enterprises as a new species of enterprise, trying to establish in the turmoil of the economy and social life. We see them as the result of a coevolution of economic change (which started with CSR and other sorts of sustainable enterprise, such as the circular economy etc) and new trends in active citizenship (the so called participation society). Although business and social scientists often use biological concepts for developing a deeper understanding of what happens in this intermediary zone between two academic traditions, e.g. economic ecosystem theory (Nambisan & Baron, 2012) and social system theory focusing on path dependencies (Van Assche, Beunen, & Duineveld, 2014a), no systematic attempt so far has been made to use an encompassing description of evolutionary theory to account for the current social economic changes. Borrowing theoretical concepts of one field of academic research and applying them to another may be tricky if it's done superficially. It may lead to theoretical vulgarisations, but it may also lead to theoretical innovations if it's done carefully with much contemplation and reflection. Interestingly enough social knowledge can influence and inform evolutionary theory, as has been shown by integrating psychological knowledge in an analysis of cultural evolution by Mesoudi (Mesoudi, 2016; Mesoudi, Chang, Dall, & Thornton, 2016; Mesoudi, Whiten, & Laland, 2006).

By providing an extensive account on evolutionary relations between a new species and the environment we will address the issue of enablingness by discussing process (the full spectrum of interactions in time) and design (a uniform set of regulations and prescriptions). Moreover we do not directly impose the sole idea of competition directly to the field of social enterprise. Inherent to a social entrepreneur is his social and emotional intelligence, which has been conceptualized as the innate Theory of Mind by Evolutionary Academics (Carruthers & Smith, 1996). This implies competition and cooperation at least to be equally important.

Reasons for using evolutionary theory for understanding social enterprises are:

- Social enterprises cannot be understood solely as an economic activity that can be reduced to a business model and its monetary characteristics: it is even problematic to detach them from their social context just as the highly specified species in a rain forest will not survive outside their natural habitat
- Producing social output and impact in due time goes hand in hand with an increasing web of diversifying social relationships, as happens with succes-

sion in an ecosystem and other related biological concepts of evolution

- Any small social enterprise can be the beginning of a societal change that alters the institutional framework of society, just as the coevolution of individual genes and their effects via traits on the ecosystem as a whole

These arguments of habitat, succession and coevolution refer to processes of change which can be described by using fundamental concepts of change such as extinction, origination, transformation and migration. Coevolution of species may be divergent or convergent, accounting for homogeneity or diversity. All these concepts seem highly relevant for understanding the social enterprise in its natural environment, and how this should be done will be elaborated in this report.

It is very important to realise that evolution a priori is a blind process. It thrives on coincidences, on failures in the replication of genes and on straying in the habits of individual animals and plants.

The advantages of using evolutionary theory can be great but need to be proven. On a very basic level evolutionary theory contains the idea that diversity due to mutation (genetic), to variation (phenotypes) and experience (epigenetic) can lead to new species if the environment provides opportunities to create niches. "New species can emerge everywhere, but it's the environment that selects" would be the pitch based on Darwin. Darwin describes the struggle for life and describes how only the fittest will survive, creating well adapted offspring in his book On the Origin of Species by Means of Natural Selection (1859)[1]. This is a parameter for success in evolution: can we learn from success stories in biology in our thinking on an enabling environment? It would be great if we can learn more about what it takes to create an enabling environment. Moreover evolution theory is about complexity in relationships and this also may provide lessons for the social enterprise. Immediately we can see the parallel with social enterprises. Here also there is a struggle for life and only those who are "fit" will survive. The meaning of fit can only be understood if one looks at the cultural, political and institutional context of an enterprise. Fit to survive in Germany doesn't provide any guarantee for surviving in the Mediterranean.

We immediately make a reserve towards Social Darwinism: our research and its discussion does not aim at creating better humans by means of evolutionary principles.

Aim

The aim of using evolutionary theory in the study of social enterprise is to find the mechanisms of path dependencies that lead to radiation and diversity in the coevolution of the social enterprise and the ecosystem and account for the contextuality of these mechanisms.

Methodology

The part of EFESEIIS that deals with evolutionary concepts is based on a threefold approach:

- Literature study
- Workshop with biologists
- Review of the national accounts of the evolution of social entrepreneurship

The literature study has been done with snowball technique. At first the most important elements of evolution theory have been documented using handbooks. These elements have been elaborated with a search by Google-Scholar. This yielded a further list of evolutionary concepts that could potentially be used. The results have been discussed in a workshop with biologist, working in the field of nature conservation at Alterra. With an extra search in Web of Science and Scopus additional literature has been found in which evolutionary theory has been related to cultural, social and economic literature.

Concise description of evolutionary theory

In 1859 Darwin presented his ideas on evolution in his book On The Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life. All species emerged from other species by descent, was his message and this collided with the more pastoral views on nature as a harmonious creation. As a consequence it became obvious that species can change in time. Darwin postulated that the offspring success of an individual depends on the way his characteristics fit in its environment and only the best characteristics will be given through to the next generation. His theory is based on three principles:

- Variation
- Selection
- Heredity

Variation

Within a species each individual differs from another. The differences may be small and seemingly insignificant, but they are very important for the process of evolution. If all individuals of a specie would be exactly the same, then there could be no process of change.

Selection

Variation can be the source of selection, depending on the environment an individual is living. Some characteristics are favourable and others are problematic. An individual with predominantly favourable characteristics has a greater chance of producing offspring with respect to an individual with less favourable characteristics. This very central part of his theory was called "survival of the fittest".

Heredity

Darwin knew that plants and animals pass on their characteristics to the next generation. A few years later, in 1865, Mendel published his famous work on heredity, based on experiments with peas. With his research he had shown each characteristic to have two heredity factors, one from the mother and one from the father. One of them dominates the other. When in 1953 the chemical structure of the chromosomes was disclosed, it became clear that changes in the genes of an individual (mutations) can be a source of variety that in the end may lead to subspecies or new species. The collection of genes in an individual is called its DNA. DNA contains the prescriptions of how all elements of an individual plant or animal should be made in its developmental stages.

Until recently genes were considered to be the static carriers of genetic information, but this has been proven to be a false assumption. They are competing with each other as showed by Richard Dawkins (1976) in his book The Selfish Gene. He concluded individual genes to go for success, even at the cost of success for the species. In his theoretical account on evolution not only genes play a role, but also memes. A meme is the behavioural complement of a gene. He used his memetic theory to understand the creation of niches as an a priori coevolutionary process.

Very recently this dynamic idea of the expression of genes has been extended with epigenetics (Verhoeven & Preite, 2013). Epigenetics accounts for changes in heredity that are not induced by mutations of other changes in the structure of the DNA[2]. Some genes may be activated and others not and this pattern of activation can be passed on to the next generation. The DNA is wrapped

[1]Note that we avoid the Darwinian tautology here, stating severe criticism on the tautological relation between fit and reproduction success
[2]http://www.kennislink.nl/publicaties/de-basisprincipes-van-de-evolutietheorie

around certain proteins, called histones. Both DNA and histones are covered with chemical tags. This second layer structure is called epigenome. The epigenome shapes the physical structure of the genome (the DNA strings). It tightly wraps inactive genes, making them unreadable. It relaxes active genes and by doing this making them easily accessible. Different sets of genes are active in different cell types. Epigenetics tags react to signals of the outside world (e.g. stress).

When discussing the key concepts of adaptation and fit, we will discriminate between the original Darwinian concept and its contemporary (a-historical) use. With fit we mean the original concept and with fitness the contemporary; adaptation refers to the original concept and adapativity or adaptiveness to the contemporary.

Applying basic evolutionary concepts

If we try to apply Darwins theory to our new species of social enterprise we immediately are confronted with misfits and problematic choices to be made. Nevertheless below we give it a try. Note that in evolution theory the concept of a species is defined by sexual reproduction: if this remains possible despite all sorts of variety we still speak of one species, or of subspecies in case of striking differences. Only if sexual reproduction does not occur between two populations that share their ancestors, Darwin considers them to have become separate species. Currently social enterprises can be understood as varieties of profit or non-profit enterprises. Until now there are no clear legal or organisational distinctions that inhibit a merge with a traditional company. If asked, most traditional enterprises would even claim to produce social value for society. This blurs the possible differences. We are not yet in the stadium of a separate species that cannot reproduce with traditional enterprises, but the variation of what is called social enterprises is growing and therefore they are in a definite process of institutionalisation. In evolutionary terms, the social enterprise can be called a subspecies, or even better a complex of different subspecies adjusting to its relevant environments. The parallel with the Finches on the Galapagos islands discovered by Darwin is obvious. It is just a matter of time when the subspecies of social enterprises have become species that generate a fertile environment producing new niches for subspecies and species. If a species becomes abundant a necessity emerges to concur next best niches or even niches providing harsh living conditions. It is in those niches where genetic modifications can lead to new species. If identical social enterprises coexist in a certain social context, they will tend to specialize and avoid competition in this way. This is similar to specialisation and differentiation in an en evolutionary pathway.

Evolutionary concept	Application to social enterprise
Species	Social enterprise (status nascendi)
Fit	Economically viable (including low rating of productive hours inherent to small enterprises)
Genotype	Legal status
Phenotype	Organisational structure
Epigenotype	Expertise → Business model/value proposition
Mutation	Change in legal structure
Variation	Inherent diversity in organisational structure and business models
Selection	Environmental pressure on organisational structures
Meme	idea that competes with other ideas on social impact

Species and the environment

If a population of a certain species enters an ecosystem, the ecosystem inevitably changes. The web of relations changes due to competition on food resources, on living conditions such as light or nutrients or due to emerging new structures e.g. in vegetation. This implies that there is no undefined context in which new species have to find its way, but a complex web of relations it has to deal with. The idea of a species and its environment is crucial, and this is also a basic point in social system theory (Luhmann, 1995).

Darwin tried to account for the variation within species. He considered three important mechanisms causing variation (Burian, 2005):

- Gradual geological change[3]
- Isolation of populations from one another
- Adaptation to new environmental conditions

Gradual geological change

Darwin knew that the surface of the earth is subdue to great changes. He was greatly influenced by Charles Lyell, who wrote about this in his book *Principles of Geology: being an attempt to explain the former changes of the Earth's surface*, by reference to causes now in operation. He defended his idea of a steady accumulation of minute changes over enormously long spans of time. The subtle processes of change that can be witnessed in actual time are the same that shaped the forms of the earth. "The present is the key to the past" was his central theme. Darwin understood how some islands were geologically much younger than others and he even described the emergence of atolls. He understood how new islands have to be concurred by populations from elsewhere.

[3] Derived from Lyell Principles of Geography

Isolation of and stepping stones between populations

MacArthur and Wilson elaborated this part of evolutionary theory with their account of island biogeography and stepping stones (MacArthur & Wilson, 1967)[4]. The more isolated a population will be on a remote island, the more it will develop its own pathways of change. Darwin saw this clearly when visiting the island groups of the Galapagos. MacArthur and Wilson developed a mathematically analytical framework to account for the distance and species dispersion. Within their analytical framework they integrated the idea of stepping stones. Stepping stones are small islands not big enough to host a viable population of a species, but functioning as in between locations that enable species to conquer more remote islands.

Adaptation to new environmental conditions

An organism is well adapted when its structure and programmed patterns of behaviour enable it to solve expectable challenges of the environment optimally (Burian, 1983). Burian (Burian, 2005) discriminates between absolute and relative adaptation, whereas absolute accounts for the design whereas relative accounts for the process by which the design was produced (60). If the variations of a given feature, system, or behaviour pattern were causally efficacious in the refinement of that feature, system or behaviour pattern by means of natural selection, then that feature counts as an adaptation relative to its alternatives.

Evolutionary concept	Application of it to social enterprise
Gradual geological change	Socio-economic transitions such as the reform of the welfare state
Isolation of populations	Thematic and city groups of social enterprises
Stepping Stone	Small in between locations that enables species to proliferate to remote areas
Adaptation	Ability to address social needs in a transitioning de-institutionalising social economy

[4] MacArthur, R. H. and Wilson, E. O. 1967. The Theory of Island Biogeography. Princeton, N.J.: Princeton University Press

Ecosystem relations in evolutionary theory

In the interplay between a species and a changing environment new niches emerge. A niche is a specific set of environmental conditions wherein a certain species can live and actually shape its living conditions.

Relations between the species and its environment always are reciprocal, which means that there is always an element of coevolution[5]. Relationships and patterns of behaviour may change and in the end change the epigenome and the DNA of populations living in an ecosystem. These coevolutionary relations have been described with many different concepts such as:

- Competition
- Food web relations
- symbiosis: mutualism, commensalism, parasitism

Besides these, many other sorts of biotic/abiotic relations can be designated. From the point of ecosystem analysis four types of relations are postulated by Van Leeuwen (1979):

- operational relations or direct interactions for the steady state dynamics
- conditional relations that determine the flow of resources
- positional relations that determine the position with respect to flow resources between source and sink
- sequential relations that determine the positions in time with respect to the flow of resources between source and sink
- tipping points

The richness of species has diverse relations with the productivity of an ecosystem, referring to heterogeneity of the substrate, the species pools nearby, the environmental regulators (nutrients and limiting factors) and possible sources of disturbance (Grace et al., 2016). Disturbance can have an enhancing effect on species richness (Grace et al., 2016).

For long theorists worked with the concept of climax (especially in vegetation sciences), referring to a relatively stable situation in which the succession of an ecosystem ends. Recently it appeared that seemingly stable ecosystems can undergo a sudden change, due to minor causes. Gladwell developed his idea of tipping points for sociological changes in society (Gladwell, 2000). This idea was taken up by ecologists facing sudden changes in ecosystems (Scheffer, 2009, 2010).

[5] This is also accounted for in Neo-Institutionalism

Evolutionary concept	Application of it to social enterprise
Competition	Competition for grants and contracts
Food web relations	Working together on specific social needs
Symbiosis	Local exchange trading system bringing the enterprises at a higher plan
Operational relations	Account management
Conditional relations	Meeting the requirements of contracters or grant providers
Positional relations	Relating to target group, institutional setting and public administration
Sequential relation	Exchanging leads to possible follow ups of projects
Succession	The complexity in ecosystems emerging over time
Tipping Point	Small change invoking big effect in ecosystem structure

Ecosystem relations tend to evolve and this is called succession, a process by which the plants and animals of an area are being replaced by others of a different nature (Spurr and Barnes (Forest Ecology, 1980).

Evolutionary beneficial traits and behaviour

Key to survival is the capability to learn how to cope with changes in the environment. Recently it has been proved that this learning can in fact be social learning, even by rather primitive animals like small fish (Mesoudi et al., 2016). Mesoudi et al. (2016) make an oppositional distinction between cultural behaviour and individual learning of animals. The idea here is that the plasticity of the phenotype (capacity to structurally adapt) increases under the influence of social learning. Naturally there is a strong relationship between social learning and epigenetics. Changes in social behaviour are considered to be a key aspect of the social evolution of the human species. These changes however are poorly understood. Academicians try to understand this by studying the conditions of cultural change in the animal world, by studying for instance the behavioural evolution of primates (Foley & Lee, 1989). The analysis consists of mapping social systems, using distribution states, calculating evolutionary distance and create an overview of (marginal and preferential) evolutionary pathways (Foley & Lee, 1989). This methodology is very interesting and could inform and inspire an evolutionary analysis of the social enterprise.

Evolutionary pathways

Evolution is a blind process, there is no plan whatsoever. Basically two elements of change coevolve. On the one hand environments change constantly and species have to cope with these changes. On the other hand there is variation in the behaviour of individuals within a population of a species, or failures occur in the reproduction of genetic materials. Both changes are connected by the survivors of a population and if no connection is made, a species will eventually become extinct. We can illustrate this by the behaviour of Salmons. Salmons tend to return to their place of birth for spawning. This process is very precise, so in each river system the population of Salmons will drift away from its origins. If a river would dry out or would undergo major geographic changes in its estuary for instance, the Salmons probably cannot find the entrance to their spawning grounds any more. However, a very small proportion of the fish are straying. They behave differently and swim into estuaries that do not give access to their spawning grounds. Most of them will not reproduce, but very few will succeed. In case of a sudden change in the geographical pattern of a river, those will be the survivors.

Evolutionary pathways normally deal with reconstructions on how one species developed in another. Reptiles adjusted to a colder climate, and developed hairy structures on their skin that eventually became feathers with which they could fly. Palaeontologist always are looking for missing links to show how gradually these changes manifested. Big evolutionary changes were caused by the Ice Age for instance, and nowadays scholars discuss the consequences of human behaviour on evolution, using the concept of the antropocene gap (Galaz, 2015).

Evolutionary pathways are studies by macro-evolutionary and micro-evolutionary biology. The macro strand can be divided in systematics, paleobiology and biogeography. On micro level the study of population genetics and molecular genetics can be distinguished. Micro evolutionary changes are grounding those on macro level. Those on macro-level however may result in new evolutionary pathways on micro-level.

If we apply this concept of evolutionary pathways to the field of social enterprise, a haphazard seemingly chaotic pattern of changes can be reconstructed. The pathway may start with impact discussions and actions to measure social impact. If a system of impact measurement has been developed, further actions on procurement may evolve with certain legal implications. Another pathway may occur if impact measurement leads to a discussion on

business models and how to use expected impact to acquire funding. Actions and decisions taken in the ecosystem and also by the social entrepreneur respond to previous actions, but will also be directed by mostly political and moral discussions on what is fair and what is needed. The discussions will show how the social enterprise sometimes is a specific category in the economy and sometimes just portrayed as an entrepreneurial brand. Is it a deviant population, a race or even a new species? The evolutionary pathway is influenced by those kind of implicit judgements.

Conclusions: key concepts for building an evolutionary theory on the social enterprise

The whole body of evolutionary theory is too big to use without any sort of prioritisation of concepts being more useful or applicable than others.

Below we mention the concepts that will be used as a theoretical tool to assist in making secondary observations on evolutionary pathways:

- the concept of coevolution
- succession
- hybridisation
- diversity and evolutionary radiation
- heredity (taxonomic affiliation)'
- tipping point
- stepping stone

These concepts are elaborated below, not as elements of evolutionary theory but as instruments to look into the EFESEIIS materials.

Coevolution as epistemology

In EFESEIIS we see social enterprises not as static objects in a surrounding of institutions that might be called ecosystem, but as organisms, viable and producing good ideas. Good ideas providing a competitive advantage in the economic struggle for life. Their environment is based on social relationships, infringing the institutional environment. Very practically they very actively connect on a personal basis with people who are within institutions. So that means that the process of coevolution is in fact a competition between all kinds of loyalties and agreements that are institutionalised within the ecosystem, and the power of good ideas. Ideas are good if they combine impact with eco-

nomic revenues. Learning processes within entrepreneurial communities lead to better ideas and better ideas combine more impact with more revenues. In EFESEIIS we came across many entrepreneurs who live on the edge of poverty while striving for a better world, and many respondents believe that this has to be. These entrepreneurs however are beginners: an enabling environment does not sustain this poverty but helps them to combine impact and income. Good entrepreneurs shape their own environment that helps them to change the ecosystem in such a way that opportunities emerge and can be grasped[6].

Above we elaborated the notion of the entrepreneur shaping his environment by a combination of personal relationships outreaching institutional boundaries, but the opposite is also true. Institutions changing their modus operandi because they wish to engage in this new branch of economy. Financial institutions for example take an interest in what they call "social return on investment" and of course they need good practices to convince each other that this is not just a good idea, but that it should be practiced. All kind of institutes within the ecosystem are observing the discourse on social entrepreneurship and some are more eager than others to adjust their strategy, to make impact and to contribute to the social evolution of economy.

Of course the coevolution is more complex than the intertwined processes of change that crisscross the boundaries of social enterprise and ecosystem. Also within the ecosystem and within a community of social entrepreneurs there may be coevolution, based on social learning and creating interdependencies. Those interdependencies may be a combination of strategic and haphazard relations with fellow entrepreneurs, founders, public procurement officers and many more. More complexity is a precondition for more options to do business and create value, but this has to be managed by a limited amount of time.

This view of coevolution is much more elaborate than the common scientific practice of seeing social enterprises merely as clearly defined objects in society that need to be fostered and regulated. It combines ideas of anti-essentialism (Fuchs, 2001), actor-network (Latour, 1987) and social system theory (Even Zohar, 1990) with evolutionary theory.

Succession

Succession here is understood as the way an ecosystem and the community of entrepreneurs evolve over time, changing their ecosystem organisation and the rules governing it. One of the important questions is how the ecosystem and the community of entrepreneurs are evolving. Does it become more stable, are they making progress? This is extremely difficult to measure with econo-

[6] In the Dutch case a small social farmer enterprise successfully addressed the Parliament with a request to change the law. He suffered from rules on intensification of cattle breeding, whereas he obviously managed one of the most extensive cattle farms to be found. This is just an example, but what is meant here is that the entrepreneur manages a huge network of personal relationships with people who have the power or authority to make (minor) changes in the way system requirements are deployed.

mic or sociological indicators. In evolutionary theory succession stands for the idea that interrelations are becoming ever more complex as the system evolves, until a disaster such as a fire demolishes it. In evolutionary theory there are many sorts of relations, such as predator-prey, commensalism (only one part of the relation benefits, while the is neither benefited or harmed) mutualism (both benefit from the relationship) or parasitism. The parallel with social enterprise is evident. If the system becomes more complex this is beneficial for a social enterprise, because he can choose what relationship to turn to for assistance, money, good ideas etcetera. In case on sort of relation becomes less relevant, e.g. because of a change of law, a replacement by another organisation can be easily accomplished. Based on ecological theory the interdependencies become more complex and the ecosystem becomes more stable.

In evolutionary theory the question about the direction of the selection process has received a lot of attention in Neo-Darwinism. Should the processes of change just be seen as drift? Or is there some orienting process active, leading to systematic structuring? It seems that indeed there is some orienting process leading to an increasing complexity of ecosystems, in which the growth limiting factors, such as light or such as Calcium, are used most efficiently. At a certain point changes become very slow and the ecosystem stabilises. This phase is accounted for by the climax theories. At first it was believed that each succession would lead to one similar stable endpoint: the monoclimax theory by Clements. Later Tansley advocated his polyclimax theory of different stable endpoints that are controlled by local factors such as soil type and geographic position.

In succession theory a distinction is made between:

- autogenic mechanisms
- allogenic mechanisms

Autogenic mechanisms

If the changes in environment are caused by the plants and animals themselves we speak of autogenic mechanisms. One example is the sequence of plants that can be found in bog formation.

Allogenic mechanisms

If the changes are caused by physical processes that are independent of the plants and animals living in the area, the mechanisms are designated as allogenic. Regression and transgression of the sea is a good example here.

If there is a sudden change in the structure of the vegetation and the animals which influences the structure of the ecosystem, such as a disease, the mechanism is designated as biogenic.

Structure and dynamics: self-regulation

Self-regulation is characteristic for all forms of life. Biological systems tend to evolve to a steady state by means of self-structuring processes. All elements of a system have fixed places in the steady state. The order of living objects can be disturbed, but it will tend to the steady state again. This self-structuring takes place via selection and regulation and here we come back to the issue of relations described above.

Hybridisation

In evolutionary theory hybridisation stands for the exchange of genes between different species. Hybridisation can cause disruptive or divergent selection (Mallet, 2008). When applying this concept to social enterprise, one could say that hybridisation takes place when a social enterprise combines two different legal entities to account for its business and its altruist activities in separate strands. It may be observed when an institute partly conveys its activities to social impact. It is a strategy that leaves the option of backtracking open. They may be operating in two worlds and it is not clear if they will develop in the singular entity of a social enterprise. They are interesting however, because they clearly show that a combination of identities is considered beneficial, giving access to the privileges of business and social institutes at the cost of a double administration.

Diversity and evolutionary radiation

In ecosystems diversity is important. Diversity is inherent to evolution because evolution doesn't have a direction in nature. It is a process in which coincidence plays a significant role, despite the fact that the environment sets the conditions of success for various species. This un-directedness is important, because environments suddenly may change. Diverse systems are more productive than less diverse ones (Grace et al., 2016). Diversity is also seen as beneficial for stability. Diversity can also be found amongst the social entrepreneurs and within the ecosystem. It will be important to describe the diversity in terms of specialisation to occupy a niche, and the strategy for continuity and survival. If diversity is described, we will combine the diversity analysis with our understanding of coevolutionary pathways to discuss evolutionary radiation.

Heredity (taxonomic affiliation)

In the origin of species Darwin discusses how the evolutionary theory helps to understand how actual species originated from others, by processes of variation, selection and heredity. Simple forms of life develop into complex life forms after millions of years. One can elaborate the evolutionary relationships

by means of schemes, in which it is illustrated how birds developed out of reptiles etc. Heredity can be defined as the process of passing on (ever slightly changing) sets of genes between generations, accounting for the pathway how one species over generations changed into another. For social enterprises it is important to know where they came from and where they are heading to: to develop an evolutionary perspective on the affiliations. Probably there are many routes to become a social enterprise, because they may begin as a normal enterprise, or as an NGO, an privatised institute from the public administration, a cultural foundation or a citizens' initiative among many other examples. The concept of Social Enterprise puts a constraint on their development path, forcing them to adopt new behaviour to align to definitions and criteria. After having acquired the status of social enterprise their pathways may become diverse again, taking different routes and directions.

Discussion

The theoretical EFESEIIS work on evolutionary theory is deviant from the ecologist tradition and merely builds on the premises and results of cultural evolution (Binder, Hinkel, Bots, & Pahl-Wostl, 2013) and generalised Darwinism (Aldrich et al., 2008; Hodgson, 2013). The cultural approach provides tools for the synthesis of social and economic approaches and with them bridging the paradigm gap (Mesoudi, 2011). In the ecological scientific tradition the micro-evolutionary knowledge is constructed by comparing all sorts of developmental stadia in ecosystems, often based on spatial distributional patterns or on the alternation of relative stable and unstable phases in succession (Odum & Barret, 2004) (Golley, 1991). The study of social entrepreneurship lacks this precise determinist knowledge on ecosystem structures and moreover it should encompass the discursive stages of an idea and how it is put in economic practice. As a consequence the focus should be put on actions of the social entrepreneur and the directly observable changes in ecosystems (Binder et al., 2013). In this approach it becomes almost impossible to grasp the full complexity of an ecosystem in a specific phase and compare this with a phase before or after. As an alternative, specific or partial evolutions within the ecosystem have been interpreted, such as those on funding or on legal developments or the cultural process of learning between generations of social entrepreneurs (Cavalli-Sforza, 2001; Mesoudi et al., 2006). This however is not due an epistemic choice for reductionism, but rather a consequence of pioneering with research and interviews in a field of great complexity and many interdependencies.

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