



A theory of Committed Action for Nature

Key outcomes of the BIOMOT project

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Preface

This booklet represents the key scientific outcomes of the BIOMOT project, shaped in the format of a theory of three interconnected social system levels: individual action, collective action and society. Options that result for policy making are wrapped up in a twin booklet of the present one, called “Fostering committed action for nature: policy recommendations of the BIOMOT project”, available on the website www.biomotivation.eu and from ISIS, Faculty of Science, Radboud University, P.O. Box 9010, 6500 GL Nijmegen, the Netherlands.

The BIOMOT project was funded under FP7 as a response to call ENV.2011.2.1.4-3 that mentioned that due to the dominance of the ecosystem services concept, “alternative, non-economic arguments and strategies are sometime neglected” and requested an “analysis of alternative ways to improve biodiversity policy making and governance”. On that basis, BIOMOT set out to *study the motivational strength of ecosystem services and alternative ways to express the value of biodiversity*. The Project was operational from September 2011 to August 2015, and executed by eight partners in seven EU countries: Radboud University and Leiden University (Netherlands), Greifswald University (Germany), CIRPA (Italy), ZRC-SAZU (Slovenia), University of Manchester (UK), University of Eastern Finland (Finland) and the Université Catholique Louvain (Belgium).

The project was organized in four Work Packages, with WP1 focusing on the ecosystem services debate and the visions of ecosystem service valuation practitioners, WP2 on groups in committed action for biodiversity, WP3 on committed actors for nature and other societal causes, and WP4 focusing on integration and the ‘macro’ level. The separate results of the Work Packages are available on the website or by writing to: ISIS, Faculty of Science, Radboud University, P.O. Box 9010, 6500 GL Nijmegen, the Netherlands.

The prime aim of this report is to give an overview of the findings in an accessible style. This has implied that the *embedding* of the emerged theory in the wider theory fields remains underdeveloped here, with relatively few references to areas of psychology, governance, economics, collective action and philosophy. For these fuller accounts as well as more details on the methods, the reader is referred to the Work Package reports and the other, peer-reviewed outputs of the project, retrievable through the website www.biomotivation.eu and through the names of the BIOMOT researchers (see title pages) in the scientific search engines during the coming period.

In the present draft version, references to underlying BIOMOT work and peer-reviewed publications are not yet taken up. They will be in the final version.



1. Methods

BIOMOT was organized in four Work Packages (WPs), with basically all partners participating in all WPs, ensuring cross-cultural fertilization and interdisciplinarity. WP1 focused on ecosystem services and valuation (debate, visions of experts). WP2 focused on groups in action for nature, through document study and most importantly interviews of participants in each of the 34 groups studied. WP3 focused on the level of individuals in action for nature, contrasted with individuals in action for other societal causes, such as sustainability or global development or working for nature but on a lower level of activity. In total, 213 'life story' interviews were held. These were expanded with a card sorting exercise and a web-based survey of the same actors. Except on the epiphanies and survey analysis, the present report is confined to the 105 actors committed to nature, hence "lives for nature". WP4 was tasked with the interdisciplinary integration primarily during the early and late stages of the project, supported by on-going philosophical analysis of all emerging issues, with emphasis on the level of public discourse.

In WP1, visions of experts on ecosystem service valuation were assessed through Q-sort methodology. The sample consisted of 40 university-based economists, GO and NGO-based economists, experts known as critical of valuation, and other individuals prominently engaged in the valuation debate, from all seven BIOMOT countries. The approach followed the standard Q methodology, with broad literature exploration, compilation of the full 'concourse' representing all arguments pro and con valuation, selection of the 'Q-set' of statements for the survey, and factor analysis (varimax rotation) of the results.

In WP2, groups were selected as explained in Section 5. In each group, five participants were interviewed, identified as the group initiator, a key contributor, a closely involved stakeholder, a beneficiary and a closely involved policy maker. The interviews were semi-structured, with main questions focusing on motivations, leadership, monitoring, incentives and sources of information. Analysis was done with descriptive statistics and a probit model contrasting two types of groups.

In WP3, committed actors for nature were selected by first distinguishing between several 'sectors' of action, e.g. nature NGOs, government workers, schools, business and media. Within each, one or two reputedly highly committed actors were selected. After the interviews, a few of those had to be dropped because they appeared to be less internally driven than thought or less focused on biodiversity (e.g. more on sustainability issues). Finally, 105 remained in the analysis as actors committed to nature, complemented by 108 actors less committed or committed to other causes, all spread evenly over the seven BIOMOT countries. The interviews were structured around a topic list but with much freedom left to the interviewees to define sequences, interject anecdotes and reflections and so on. The topic list focused on the interviewee's current activities and a free exploration of the (dis)connections between these activities and the interviewee's life stages, ordered roughly as youth (0 – 15 years), adolescence and early adulthood (15 – 25 year) and later life. At the end of the interview, the interviewee was asked to rank 20 cards with (literature-based) motivations written on them, e.g. "Curiosity and learning" or "Social benefit", focusing first on the actor's main interest (nature or other cause) and then on nature if the actor's main interest was on an other cause. This element was added to elicit more reflection from the interviewee but also to move one step out of the interviewee's particulars and into a more general array. The ranking was on six levels from most to least important, without prescription of number of cards per level. All interviewees were also invited to fill out a web-based questionnaire. In total, 183 questionnaires were received back and analyzed with methods described in Section 4.



Much work was done in BIOMOT on philosophy and social theory. Their methods are hard to describe, other than to say they did “what theorists do”: read, think, analyze, write, think while writing, critically discuss issues, revamp issues, seriously questioning one’s own assumptions, throw draft paper in waste basket, empty waste basket to fish paper out again, Struggling towards truth in (self-)critical inquiry.

2. Structure of this theory of committed action

This section explains several key concepts in the theory, as well as its overall structure.

Explanandum

This theory seeks to explain and predict **committed action for nature** (or: biodiversity).

Hence action directly, not *motivation for action*. This has several reasons. First, action is much easier to measure; actions can be seen, motivations cannot. Second, action is much more relevant than motivations; actions change the world, motivations do not. And finally, focusing research on motivations would invoke many poorly defined concepts and open up the dreaded ‘attitude-behavior gap’, which is the often striking difference between what people think to be good and what they actually do.

Next to note in the explanandum is that we focus on *committed* action. ‘Committed’ here means that the actor devotes much more energy, thought and persistence to the action than would be necessary for reasons of job, income, tradition or reputation. The lives of committed actors are ‘lives for nature’ to a full or more subdued but still significant degree. This focus is justified for reasons of research practicalities but also because we may assume that to some extent, knowing what drives the heroes will help understand what drives the more common person as well to some degree. Moreover, heroes provide the exemplary stories for others to re-tell and re-live; next to their direct impacts, heroes change the world also through that route.

Formation and levels in interaction

The structure of our theory follows a well-known pattern, often referred to as the micro/meso/macro levels in social science. It is depicted in Figure 1.

We start out along a time-line. What people do, and why they do it, is seen as emergent from their life histories. This is what we call *formation* here. Continuing looking at the world in terms of the basic human entities, i.e. individuals, we see people carrying out *individual* committed actions, e.g. for nature. On the next level, we look at the world in terms of groups, taking *collective actions* as our ‘units of analysis’. The next and final level is that of society as a whole or large segments of it. Other terms often used here are institutions (= rules), structure, culture, system etc. In our theory, we have preferred the term of *grid*. Contrary to the other terms, ‘grid’ expresses that the influence that society has on all individual or collective action is *directional*: working with or against the societal grid makes a big difference in acclaim and success. ‘Setting the grid’ could then be the name for what societies do in the framing of problems, the establishment of rules and so on.

Our theory of committed action for nature comprises these three levels but also, in a less outspoken sense, their interactions. Individual action can create collective actions, and collective actions



can create societal change – the ‘up’ arrows in Figure 1. Conversely, higher-level structures determine to a large extent what people grow up into (formation) and what they desire and can do individually and collectively.

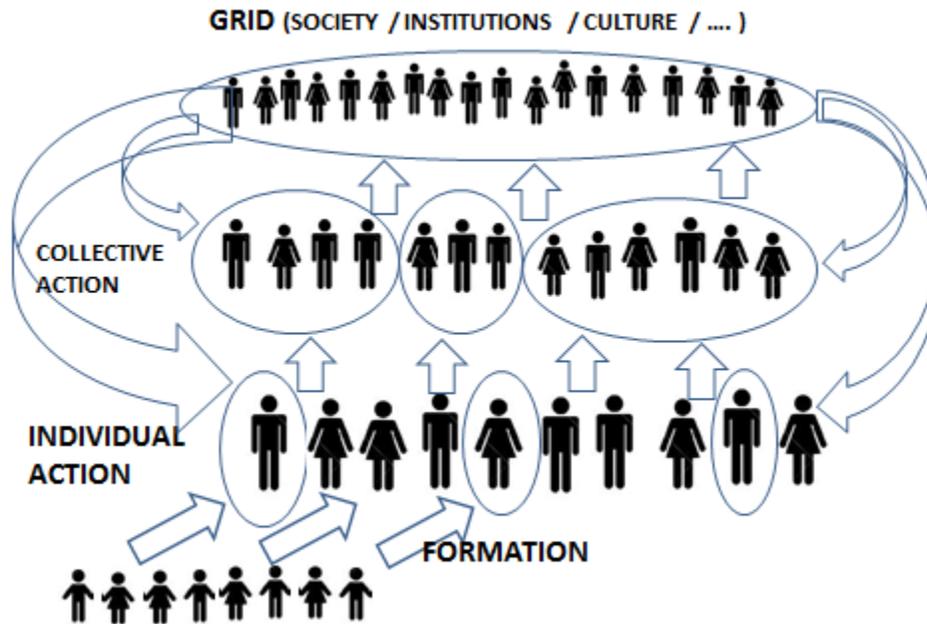


FIGURE 1. Elements in the theory: formation, individual action, collective action and societal grid.

Actor and system

The BIOMOT project has had its point of gravity in the lower parts of Figure 1, making its findings more outspokenly ‘actor-based’ than ‘system-oriented’. This is congruent with our focus on committed action, which is typically individual and collective action working their way ‘up’ to change society. This requires prudence from the reader too, however. The individuals we studied tend to be more heroic than the common us (including the authors of this report), and the groups we studied are strong and successful ones. One limitation of the BIOMOT approach is that we cannot say to which extent the influences from the societal grid down may possibly be more important for the more common persons and groups than for the ‘hero’ ones. In a more qualitative sense, however, we do presume that the factors and mechanisms we identify for the heroes will also play important roles in the lives and actions of others.

3. Formation: shaping lives for nature

‘Formation’ means how actors have grown into the actions they do at present. The analysis is based on the life story interviews of committed actors for nature. Our analysis has been primarily qualitative, i.e. searching for the overall storylines rather than overall numbers. We begin with the *variety* of lives for nature, and then move into a number of features that these lives appear to have in *common* (with



variations and exceptions, of course). There are two overall stories of the life pathways, called “Analysis I” and “Analysis II”. They are the result of two parallel approaches to the interviews (‘methodological triangulation’). One may be called: ‘waiting for the epiphany’: the analyst reads and reads and reads the interview transcripts, until a compelling idea emerges, which is then checked and rechecked in the interviews. The other method has been more systematic and theory-led, coding for concepts from theories, checking their frequencies and searching for types of causality. The results are different. One is more spectacular but the other more systematically grounded. Yet they have much in common, as the reader will find out.

The variety of lives for nature

All lives are different and certainly those of the 105 committed actors for nature interviewed in BIOMOT. There are intimate lives in schools and gardens, there are lives expanding from the local forest to European campaigning. There are lives of warriors, lives of bureaucrats, lives of leaders in business, NGOs and academia. There are ‘smooth’ lives growing fluently from explorative childhood into committed adulthood; there are ‘rough’ lives of breaking free, deviations, helpers, epiphanies – one silent hero of these lives is the forest guard who does not fine but helps the wild kids running about in nature and climbing every fence. There are ‘fast lives’, with goals for nature fixed at reaching adulthood; there are ‘slow lives’ with long stages of indifferent jobs until the fire for nature is (re-)kindled: “the long journey home”.

There are lives guided by existential motives and lives dedicated to hard work. There are lives devoted to wilderness and sea, lives devoted to urban nature or agro-biodiversity. There are lives of pride and lives of gratitude – giving back to nature, giving back to helpers. There are lives from every background: elite and working class, rural and urban, strongly political and strongly religious families, families highly interested in nature and families not at all. There are lives solitary and lives communal; there are lives of heroic fixation on ancestral farming and lives of permanent innovation.

Committed actors for nature have many different visions of what nature means to them. There is nature as space: as freedom, openness, as the encounter with the truly other, that which “makes us fully human”. There is nature as species: the wolves, the creatures of the sea, the birds in all their splendour. There is nature as stories: stories of landscapes, stories of people, stories of happiness, and, quite often for our actors, stories of foods.

No wonder then that BIOMOT researchers sometimes felt that the best thing to do with all these narratives was not to analyse them but to speak them forth. In this report we follow the analytical route, aiming to flesh out what these ‘lives for nature’ have deeply in common. This then may reveal something of the underlying patterns of how these lives have been energized and shaped.

Childhoods in nature

In the early lives of the interviewees, nature was present to an often astounding degree. “*I grew up in the forest*”, as several of them put it, or as others said, “*the indoors hardly existed*”, or “*on the beach every day*”, “*always outdoors*” or “*I had no rest indoors, had to be outside all the time*”. Other actors report less extreme frequencies of being in nature, but the great majority of them tell lively stories of the importance of nature in their childhood: e.g. “*We lived at the edge of the village, where the fields*



began, where the birds were and the river, and then the unending forest, that's where we played, and on the other side was the peatland, that was dangerous, we weren't supposed to go there but I did it anyway, mostly on my own", or: "There was the forest and the big rocks near our home; we played dangerous games there because you can fall from these rocks, as sometimes we did", or, for actors who grew up in more suburban areas: "We were always free to do our own things in the green streets, catch lizards in the dunes, steal sharks at the harbour", or for actors in fully urban situations: "We went to natural areas every summer. Certainly this gave me the imprinting; the passion for ecology was born in this house in the mountains, this wilderness", or: "With my grandfather, we would spend every Sunday out somewhere on the moors or at the coast", or for the urban immigrant child: "We went back to Turkey every summer; that village was all nature. During these long holidays, we could catch fish in two little rivers, hike in the mountains, there is everything there, there is no way, no day to get bored".

Rural children often only needed parental neglect to be happy: *"It was different back then, they did not watch us like today They had no time and we were running around in the forest".* Urban children were however often brought in contact with nature through others, such as parents or boy scout groups, who could bridge, albeit always temporarily, the physical distance between the child and nature: *"My parents brought us to see the places where there are those flowers, the eagle, the marmots, the lakes and rivers, the wild sheep and wild goats with the telescope".* Schools do not appear to play a great role in this age bracket, except on school outings, which can give the child its *"first real taste of freedom"*. Some urban kids were lucky, having nature close-by on a permanent basis: *"The brownfields began at the end of our street. We had our adventures there: making huts, playing Tarzan, starting a bean garden, building rafts, fishing, 'hunting' with bows and arrows, making fires and sometimes forgetting to put them out, watching the birds colony At home, no-one was interested in nature but I found books about the desert, the Arctic ..."*. Or another actor: *"I was lucky in that my [urban] place did have fairly good woodland cover and I was given free reign, really, from probably the age of 5 or 6 to go out different days and different times; so I just grew up in the woods"*. Sometimes, we see here, nature is close enough even to urban children that distances can be bridged without help from family or organized groups. Kids on their own remain a world apart, doing things unthinkable under supervision; *"Sometimes we found dead animals and organized funerals for them; a boy who had decided he would become a priest delivered the sermon"*.

As these quotations already show, the interviewees did many types of activities as children in nature. One actor, not in a brownfield (i.e. a place allowing anything) but in a more regulated, suburban forest: *"We played cowboys and Indians, crawled through the trenches, studied the animals There were gardens there too, with ponds with salamanders We climbed the fences, caught the salamanders, sold them in town. I joined hunting parties too At age 11, I decided to stop everything related to killing. Now I climbed the fences to watch birds"*. Other 'lives for nature' had less extremely free-roaming childhoods, characterized by family-based activities such as hiking, picking wild mushrooms, camping, swimming, collecting plants or butterfly specimens, helping out on the family farm or, often with our actors, hunting: *"My grandfather used to wake me up at 5 AM to go hunting"*. Finally, a few childhoods mainly relate to small-scale interactions with nature, often in gardens and farms, e.g. *"Loving nature came automatically. We had animals walking everywhere, we played all the time here in the [nursery] garden ... My parents were working with the flowers, we took the flowers apart, studied them, boiled a soup with the remains"*.



Most of these children had a high autonomous drive to connect to nature, much more, for instance, than their siblings. Many interviewees feel this drive has been innate and connected with their earliest memories. A desire to affiliate with nature may indeed be present in all human beings as the theorists of 'biophilia' say it is, but our interviews show that it is highly variable among people as well.

Some interviewees describe nature in childhood as only a vague background for play, or something green that started outside the city. As one (now) committed actor for nature put it: *"Up to my 14th, I couldn't tell a sparrow from a blackbird"*. Some of these actors fall for nature in the 10 – 15 age bracket, for instance the same interviewee: *"Through a friend, I joined the youth association for nature study On our bikes, rain or shine, we went everywhere That new, unknown nature area created by accident, full of avocets and spoonbills These were the revelations The whole day in nature, and all holidays too, away from my parents"*. Another actor grew up without nature in surroundings or in family culture but was taken to nature during a school trip around age 10, and *"it was snowy and freezing and cold but there it was, an amazing sensory experience for a walk in a river ... I was just swept away by the enormity of it all ... From that moment on I knew I wanted more of it"*. And so he did, fishing on the rivers outside the big city, going out with the fishing club *"which was for poor kids and disabled kids ... some really interesting characters, really tough skinheads and whatever and disabled black kids and we were all chucked in this mix together but we all got on and we all loved it"*.

This is also the age where the first special 'nature mentors', different from direct family, appear, for instance: *"In that forest, I met a woman collecting herbs. She explained to me what she was doing, and she told me what to pay attention to and how to look properly"*. Or the leader of the just-mentioned fishing club: *"We must have been a bloody handful but he organized permission to go to some really exclusive places"*. Or, in several cases, the game warden that takes the youngsters under his wings: *"I was by his side most of the day and just learning loads"*, or as another interviewee narrated: *"We climbed the barbed wire and were caught, and taken to the office Drop that fine, said the chief warden, bring them to me. And there we were, later, in his house, and he said that maybe we should talk with that professor in Germany who knows everything about these raptors we were after ... And so we went, four days on the bike."* Other typical mentors are high school teachers and university professors, feeding the youngsters' interest in nature, recognizing their special needs, leaving them freedom to explore their own fascinations. Also family members can be special in this sense, e.g. a grandmother who was *"kind of a freethinker; she understood my interest even if all other family thought that I was weird, always fascinated by what I could find under stones"*. Interviewees differ much, however, in degrees of having been influenced by mentors or other helpers. Some mention a lot, and express gratitude to a degree that gratitude, giving back, becomes an important theme in the interview. Others express having been influenced much more by books or media. And many others do not mention mentors at all.

One theme that is salient in most interviews however may have already become clear in the quotations. It is curiosity and learning. Most actors were fascinated by nature, sometimes from very early on but ever more intensely in their second decade. Objects of curiosity could be anything: insects, mammals, birds, plants, forest, moor, up to global biodiversity and the mysterious, multi-layered workings of ecosystems. For many actors, knowledge acts as a vehicle to connect with nature, and the desire to know seems to have much in common with the desire to connect. *"When you learn about*



nature, you are able to enjoy things you did not see before ... You can experience nature much more deeply”.

Finally, a characteristic that strikes the analyst over and over in these interviews is the strong self-determination of committed actors for nature. This holds for their adult life, e.g. when accepting a significant salary cut in order to get an opportunity to start in the conservation sector, or when preferring the risks of self-employment over a job in any hierarchy. It also holds for their formative years, when exploring their playgrounds ever further afield, sticking flyers on a factory emitting pink water and bad smells, or reading obsolete books that only they found interesting.

There are many more roads to explore in these interviews. The Belgian analyst, for instance, was struck by how happy his interviewees were. Would that have something to do with nature? Is it coincidental that a recent book written by a Belgian professor is called “An Ecology of Happiness”? We don’t know yet. In the next section, however, we will explore one storyline that seems to represent a robust and policy-relevant pattern in the lives of committed actors for nature.

Analysis I: Coming home to nature

Virtually all interviewed actors displayed a high ability to tell the story of their lives; it was obviously not the first time they were constructing it. This is what basically all of us do: we tell our story, to ourselves and others, to remind us and others what is important. Most stories also contained periods of self-chosen austerity, unhappiness or risk, e.g. financial or social, or when leaving university, leaving friends. These choices were seldom made for abstract ideals. They were made because they had to be, because they were needed to make life *meaningful*. More on this is in the next section.

In many interviews, ‘coming home to nature’ is a salient theme in the actor’s story of the meaningful life. Sometimes this is also made explicit by the actor him or herself, e.g. one summarizing his coming back to work for nature as “*the long journey home*”. We give some more examples below.

Actor #1 grew up on an island, “*this peaceful place*”, with nature as the great freedom all around, playing on the beach and everywhere, and following the granddad who was a hunter. “*It was my nature, the place, my jungle, my sea...*” “A home”, says the interviewer. “*Yes yes!*” At age 17, the actor went into professional basketball in a large city, a place where he “*always felt like dirty*”. Around his 25th year, the actor went back to the island, ending his “*age of separation*”. Competitive sporting was not easily left behind however; the actor was deeply involved in ocean sailing and competitive diving, up to the world championship. Competitive diving is a self-referential world, without any care for the sea itself; actor left the team; went into underwater hunting; then one day, he saved a big turtle, took care of it and released it back to the sea. “*So I dove with her to set her free, and that moment really changed my life*”. There is “*nothing to challenge in nature*”, competitive activities have become “*completely meaningless to me*”. The actor started a nature protection alliance, went into politics, organized camps for city children on the island. In terms of the theme of this section, we see a two-step homecoming here: first physically to the island, ten years later also to the activities and emotions of childhood, the peaceful place.

Actor #2 grew up in a large village with beautiful surroundings, in a family poor in money but rich in social capital, outdoor activities and stories about local nature and social life. She gladly followed her parents to the farms and forest. Her interest in nature was boosted in grade 7, through nature



lessons and especially a series of school excursions to the village landscape habitats. In secondary school however, *“something went totally wrong I didn’t even choose biology but elected language and economics, subjects that did not have any real meaning to me”*. She still went out on her bike *“but that was not for nature but rather to socialize, vaguely”*. Sinking down in passivity, she dropped from pre-science school to a vocational hotel school, living in the city and not finding any sense in this *“vague and decadent hotel business”*. The light went on again when someone mentioned the option of the teachers college. This required going back to pre-science school, which she did, followed by the teachers college, where she specialized in children and nature. After teaching for some years in other places, actor went back to her village of birth, to find her husband and her energies. For twenty years now she has been the tireless nature guide for children and parents inside and outside school hours, always searching for new opportunities *“to involve them in nature with all their senses”*. She always teaches grade 7, as if celebrating her coming home as literally as possible.

Actor #3 hails from a culturally inclined family, living at a forest edge. Actor describes his childhood as *“wonderful”* and *“spent entirely in the forest”*. After his Masters in biology, the desire to make a difference for nature searched for a channel but the policy stories told back then, stories of static nature conservation and *“the heavy stories of human guilt and human threats and acid rain”*, did not work at all for him (and society). Then, through mediation, reflection and writing, the new story was discovered, along with the new avenue for action: *“making use of nature, giving it space, not locking nature up in too much stewardship, involving people in a warm, happy connectedness with wilderness”*. Jointly with a few others, the actor initiated, inspired and led the business-cum-foundation-cum-movement for nature restoration and rewilding that expanded from the local to the national and now the European level. In retrospect, we may discern that the actor’s discovery was in fact not so new: it was the reconnection, the homecoming of the actor in the happiness of his childhood’s wilderness.

The figure underneath is designed to display this basic movement: the child starting off in its place, activities, experiences and emotions; the adolescent moving into many directions and diversions, the adult reconnecting.

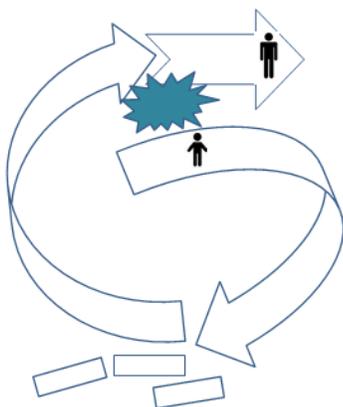


FIGURE 2. Journeys home: life spirals of many actors committed to nature. *The re-connection with intense encounter with nature in early youth energizes and directs committed action for nature in adult life – sometimes in one fast or slow but fluent life line, sometimes after many diversions, crises and epiphanies.*



The ‘home of childhood’ that actors reconnect with at the time they define their mission and find their energy is not only the physical home but just as importantly the activities, the interactions with nature and the emotions of childhood. This is the time, the pattern in which ‘everything falls in place’, the pattern in which life-determining meaning is established.

Actors often do so with a degree of exactness that is endearing to the reader of the interview transcript: from 7th grade to 7th grade; from happy child in wilderness to happiness in wilderness; from peatland adventures to peatland protection; from discovering nature as freedom in early urban youth to working for giving nature space in urban areas; the civil engineer forever playing with water

Variations and exceptions in coming home to nature

Lives cannot be standardized, and many variations are to be expected around any ‘standard picture’. And indeed many variations are visible amongst BIOMOT’s committed actors for nature. In the preceding examples, we already saw a two-step homecoming, for instance. Another ‘two-step’ type is that the actor is already committed to nature but does not know yet what his story will be, e.g. working in the conservation sector but feeling caught up in a “*hopeless dead-end street*”. The quest for the story then is the real struggle, and finding it is the epiphany. Years later, the analyst sees the story resonating with childhood experiences, and calls it ‘home’.

The major dimension of variation in the homecoming picture is the length of time the homecoming takes. On the one extreme, an actor has a childhood with strong focus on nature, then takes a quick look around in the world as an adolescent, but then immediately re-attaches, never really leaving home as it were. Such actors can say that they are “unbelievably attached”, for instance to the ancestral farm and the ancestral ways. On the other extreme, there is an actor in whose childhood nature acted more like a neutral space for (continuous) outdoor play, and whose interest in nature only grew slowly, e.g. entering the national conservation association at age 35, then discovering that he found it inspiring “*to get things moving for nature*” and only late in working life set up his landscape project in his home region, finding it “*the most intense period A sort of explosive affirmation of something that was always there*”. (Again here, resonance with childhood is exact: the type of nature worked for in the landscape project is arcadian space for play, health and economic development).

Sometimes, homecoming is double-looped in the sense of two mixed vocations. For instance actor #2 (see above) wanted to be a schoolteacher all her childhood, and finally came home being one. Nature was mixed in as part of childhood and the best thing of school; she came home to nature too, becoming the ‘nature teacher’ of her village. Another double-looped case is an actor who was practically part of the forest in childhood and adolescence, sleeping there and tracking large carnivores. This was too weird for his friends and professors however, causing him to live a “double life” as he puts it in the interview. Public life was studying biology in the city, initiating action for carnivores and becoming a university professor in animal ecology. In this picture of two spirals, the private one was very tight, while the public one took much longer to arrive.

The homecoming theme does not only have variations but also exceptions. One example is an actor growing up in a strongly political family tradition without nature anywhere and discovering nature, “*the totally different world out there*”, only at age 14 but then staying with nature for the rest of his life.



The BIOMOT interviews have not yet all been ‘mined’ for patterns and frequencies of variations and exceptions. Staying on the safe side in our conclusions, we have taken the homecoming pattern as “often”, not a necessary condition.

Epiphanies

In the foregoing, we have heard words such as “the revelations” and being “swept away”. These point at what are often called epiphanies, defined as peak experiences that shape lives and identities (e.g. actor #1: “*and that moment really changed my life*”). Not all epiphanies of our actors are in or about nature, see for instance actor #2 finding teachers college. Here however, we will tell some more about the environmental epiphanies. This will be mainly quantitative, counting how many and of what types are reported by the interviewees. Not only committed actors for nature are taken up here, they will be contrasted with other actors (most of which are actors committed to other societal causes). Not the full sample of 105 + 105 could be taken; the numbers are $n = 74$ for the committed actors and $n = 69$ for the others.

A total number of 78 environmental epiphanies was reported by 50 out of the 74 committed actors for nature. For the other actors, the frequency was much lower (a total of 17, reported by 16 actors out of the 69). A great difference was also that for the committed actors for nature, epiphanies were evenly spread over all life phases while for the others, the already low number decrease to almost zero in adulthood. Once lost, nature does not re-appear as epiphany in later life.

The scientific literature distinguishes several types of environmental epiphanies. Some are aesthetic, centering on nature’s beauty; others are more intellectual ‘seeing the light’; and finally there are deep experiences of awakening and connectedness. For the committed actors for nature, aesthetic epiphanies were important (27 out of 78) but less so than for the other actors (8 out of 17). For the committed actor for nature, more intellectual epiphanies were reported at the first rank (42 out of 78) – see also the scores of ‘curiosity and learning’ versus ‘beauty’ in the ranking of the cards in Section 4.

Only some ten percent (8 out of 78) of the epiphanies were negative, associated with ugliness or the destruction of nature, *cf.* the pink water mentioned above, coinciding with the low score of ‘anger’ in the cards ranking below. This reflects the well-known finding that negative experiences and negative messages do not motivate people to act.

Finally, it came to the fore in the analysis that environmental epiphanies can be had anywhere. In nature anywhere: the great wilderness, the city park, the close encounters with animals. But also, especially the more intellectual epiphanies, at home or at work, e.g. suddenly seeing the light while reading a book and henceforth knowing what to do.

Analysis II: Key factors in the life path

As said, interviews were also analyzed through formal coding, using concepts from literature such as on childhoods, epiphanies and ‘quest for significance’. Time limits necessitated a limitation to (as yet) 45 interviews. The result is summarized in Figure 3. Three types of causality assessed in the interpretations, based on frequency and degree of explicitness of the interviewee’s narrative: strong and unidirectional causality (ordinary arrows in the Figure), bidirectional causality (bidirectional arrows), and only weakly expressed causality (dotted arrows). Also the concepts were taken up on the basis of frequency and



explicitness, thus dropping the less relevant ones and also grouping them to significant compound concepts, also noting down the life stages in which they appear to be most prevalent. Thus for instance with epiphanies, Figure 3 shows significant roles prevalent in life stages of emotional positive epiphanies, intellectual (cognitive) epiphanies and the negative ones.

Figure 3 is constructed with the life stages on the horizontal axis and three levels vertically: the psychological level in the middle, the social context above and the natural context below, with the concepts in different colors. This way, the Figure depicts a generalized 'prototypical' life story of the committed actor for nature.

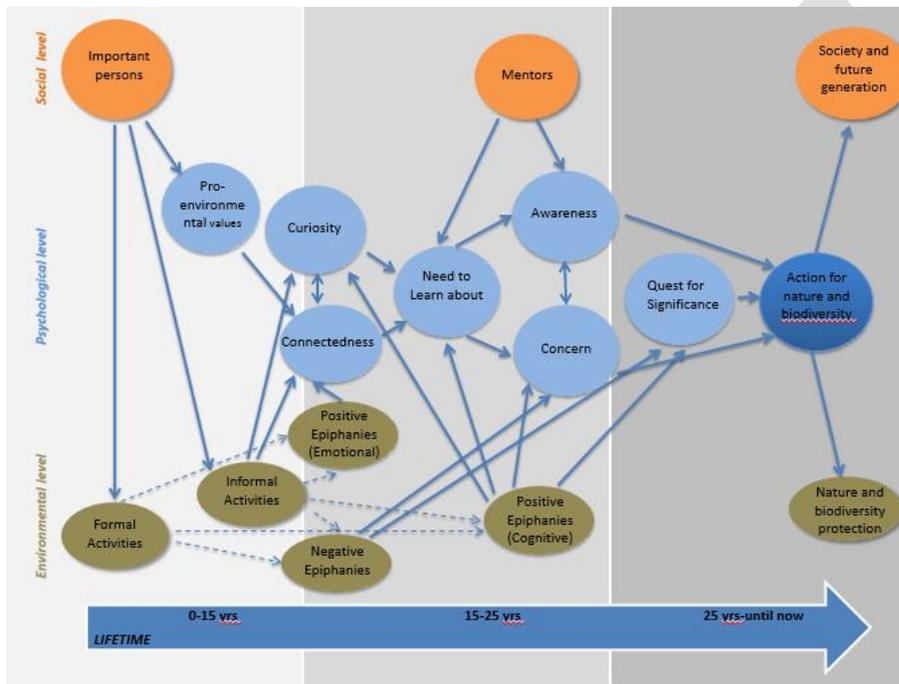


FIGURE 3. Generalized overall life story of the committed actor for nature, induced from the BIOMOT interviews. Arrows indicate causality. In the first two life stages, social entities and natural entities synergistically build the committed actor. Activities and epiphanies are important concepts at the interface between actor and nature; values and the offer of learning are important concepts at the interface between actor and society.

At an early age, the process is triggered on the social plane, with an immediate synergy from the environmental one. They basically work together and both levels start to construct pro-nature and pro-biodiversity basic psychological "bricks". This process moves forward in the second life stage: constructs change in each one of the three levels, but the same interplay remains in function. For the committed actor, awareness and concern are not passive attitudes; building on the childhood foundation and reinforced by epiphanies, awareness and concern are strong cognitions and strong motivations that join up in a quest for significance, i.e. the desire to have a meaningful life for and through nature.

The diligent reader will have noticed differences between Figures 2 and 3. This is the result of the methodological triangulation (different researchers working in parallel) as well as subtle differences



between the two teams, e.g. one being more philosophical and the other more social-psychological. In broad terms however the two results coincide well: the specific concepts in Figure 2 can be filled in into the broad sweep of Figure 2, and Figure 2 then adds that the great force of many concepts in Figure 3 is caused by their resonance with childhood nature, activities and emotions (the ‘homecoming’).

Group and systemic influences

Any analysis of individual actors runs the risk of excessive voluntarism, depicting the actor as freely developing and choosing a life path. Any analysis of society runs the reverse risk, of course (excessive determinism), suggesting that people are fully caught up in the system, ‘the grid’ as we call it here. In this section we have tried to keep society visible to a sufficient extent, e.g. in the form of parents and mentors. Parents are the voice of society to children, e.g. transferring concepts and social norms. Mentors often work the other way around, by locally breaking the grid so to speak, e.g. not giving fines, leaving the student free. Less emphasized in our analysis so far is that actors are often strongly influenced as well from the ‘middle level’, e.g. peer groups or formal groups that lift them up (or sometimes drag them down). We also often see committed actors initiating their own groups, to reinforce their effectiveness (see Section 5).

4. What drives individual committed action for nature?

In this section, we stay on the level of individual action but with more focus on the *present* characteristics of these actions and actors. Metaphorically, we can say that the interviews rerun the life movie and enable us to spot causalities in the interactions with context, while the present section presents a detailed snapshot or the current situation, partly compared to features provided by the 108 other actors. Moreover, our method will be more quantitative here, trying to also express results in numbers, e.g. correlation between levels of action and levels of connectedness with nature. In this section, we first approach the issue from the various data sources and disciplines separately, and then formulate an overall conclusion.

Result from the life story interviews

The life story interviews were BIOMOT’s most important data source on the individual level. Much of their content also pertains to the actors’ present motivations and actions. Elements, for instance, are the importance of childhoods as the *locus* of reconnection and the establishment of meaning, the high level of self-determination of the actors, the invisibility of economics as motivator for action and the role of mentors helping actors to resist being mainstreamed prematurely.

Result of ranking the motivational cards as part of the interviews

At the end of the life story interviews, interviewees ranked cards as described in Section 1, indicating what were their most important (rank 6) to least important (rank 1) drivers to act for nature. What was written on the cards is visible in Figure 3; the cards also contained some further words of explanation. It may be noted that the cards contained ‘curiosity and learning’, ‘living a worthwhile life’ and suchlike



elements that also strongly came out of the interviews. The cards were all conceived before the interviews however, and therefore represent an independent result. We never predicted, for instance, that ‘curiosity and learning’ would come out as nr. 1. Figure 4 shows the result, overall from BIOMOT’s seven EU countries.

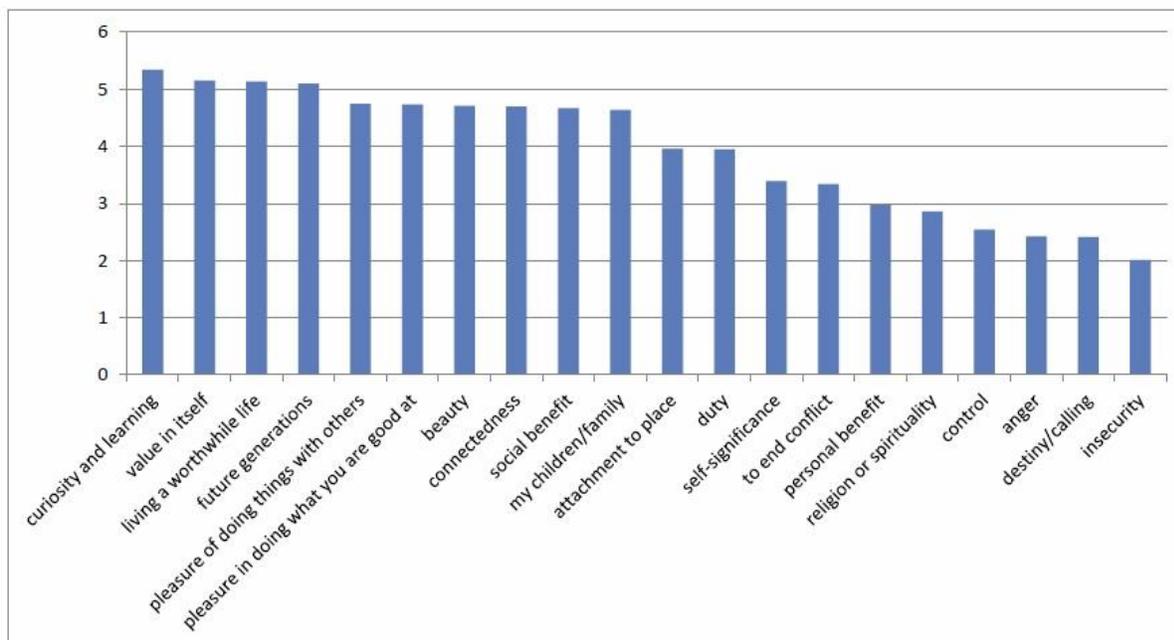


FIGURE 4. Ranking of the motivational cards by committed actors for nature

Looking at the top four motivations, we discover ‘curiosity and learning’ and ‘living a worthwhile life’. These two are obviously connected to the interview findings. Both these concepts are ‘*eudemonic*’, as the philosophers from Aristotle onwards have called them (‘*eudemonia*’ meaning: the good, meaningful life). This is a value often totally ignored in ethics and policies nowadays, which tend to focus fully on either *hedonic* values (pleasures, consumption, happiness, benefits of ecosystem services, ...) or values external to the person, which are often called *moral values* (e.g. social values, future generations, the intrinsic value of nature,). The top four of Figure 4 contain these latter two moral values. Next come two relatively hedonic ones, namely the pleasure of doing what you are good at and the (social) pleasure of working with others. The pleasure of doing what you are good at is strongly related to eudemonic values. Concluding, we may say that in this data, **the key drivers for committed action for nature are eudemonic, with (social) happiness and moral values as the main supporters.**

Ecosystem services are not present in the list, which may be seen as an omission in the element of BIOMOT. Yet, we may safely say that the pattern we find here is far removed from the idea that ecosystem services would be a main driver for committed action for biodiversity.

Result of the deductive test of a model of committed action in the survey

The philosopher of science Karl Popper said that the best way of doing science is to first generate an idea (a hypothesis) and then test this idea in available data. This is often called pure deduction. In



BIOMOT, we tested an idea of factors that determine the level of Committed Action for nature (CAn). The idea was largely intuitive, grounded mostly in logical thinking, the work of Kruglanski and Fiske and reading the life story interviews.

The basic shape of the model is simple: $CAn = A \cdot B \cdot C \cdot \dots$, in which A, B and C are factors that predict the level of CAn. The factors are arranged as a multiplication. This implies that if only one factor is zero, CAn is predicted to be zero as well. For instance, if A is the level of energy and B is the level of felt connectedness with nature, the formula says that if you feel connected with nature but have no energy to act ($A = 0$), you won't act. And if you have a lot of energy but no connection with nature ($B = 0$), you won't act for nature either.

The model we tested was: $CAn = E \cdot O \cdot Cn \cdot AAn \cdot Dn$. In this formula, the symbols mean:

- CAn = the actor's level of committed action for nature
- O = Openness = the actor's level of reflection on fit of his/her actions in his/her life story
- E = Energy = the actor's almost inborn, almost bodily general readiness to act
- Cn = Connectedness with nature = the actor's empathy with nature suffering or blooming
- AAn = Appeal and Appropriateness = the degree to which the actor feels that to act for nature is appealing in the actor's own spontaneous response, and appropriate in the eyes of others
- Dn = Difference = the difference the actor feels he/she can make for nature.

We may note here that the factors E and O are non-directional. They specify a high readiness to act, but not at what the action will be directed. The other factors are directional towards nature.

The formula may also be simplified into two overarching factors: $CAn = Rn \cdot AVn$, in which $Rn = O \cdot E \cdot Cn$ and $AVn = AAn \cdot Dn$. In this summary form, Rn may be called '**Readiness**' to act for nature and AVn may be called the '**Avenue**' to act for nature, in which an Avenue is an appealing option for action, endorsed by others and enabling the actor to make a real difference for nature.

The model was tested in BIOMOT's survey data ($n = 183$). The survey questionnaire contained 190 statements to which the respondent could respond on a 7-point scale if he/she agreed or not. One statement was: "I am very active in the protection of nature/biodiversity". This we took as the 'proxy' for CAn. Scores of 1, 2 and 3 were translated into $CAn = 0$ (no committed action), scores 4 and 5 into $CAn = 0.5$ and scores 6 and 7 into $CAn = 1$, i.e. real committed action. Likewise, we selected proxies for the other factors, all between 0 and 1, so that the outcome of the multiplication would be between 0 and 1 overall. For some factors like E and Cn, we felt confident of proxy validity. Others such as O and AAn were felt as weaker. They had resulted from the interviews and the questionnaire, having been designed before the interviews, happened to not contain perfect proxies.

The result of any deductive test is simple. It is the level of correlation between the phenomenon as observed and the phenomenon as predicted by the model. In our case, it appeared that **the correlation coefficient of the CAn as stated and the CAn as predicted was: $R = 0.48$** . This is a correlation of only medium strength but since this was a strictly deductive test, hence without any subsequent (inductive) fitting of the model to the result, it shows that the model really rings a bell, indicating that BIOMOT has been on a fascinating track. Note that the model contains nothing approximating ecosystem services. Creating committed action of nature seems to have more to do with feelings of connectedness with nature and avenues to make a difference for nature.



Result of inductive analysis of the survey data

The same survey was also analyzed with inductive statistical techniques. The strength of this analysis was its good grounding in quantitative social-psychological theories. A weakness is that these theories only poorly represent concepts that emerged from the interviews, e.g. focusing on passive values instead of dynamic meaning and lacking eudemonic concepts, resonance with childhood and so on. Some of the results were as follows.

Factor analyses were run to investigate what items in various motivational classifications appeared to hang together. Classifications included those of Schwartz, Schultz and also BIOMOT's own motivational cards (see above). Within the latter, three groups were identified that could be called motivations connected to the 'social self' (care for future generations, place attachment, curiosity and learning, and many others), to the 'self-self' (control, anger, recognition etc.) and to the 'spiritual self' (connectedness with nature, beauty, spiritual values and destiny). The groups derived from Schwartz' classification looked much the same for the two groups but different in the third, which was more hedonic than BIOMOT's more spiritual one.

Differences between the committed actors for nature and the 108 other actors were studied through analysis of variance. All differences on environmental values and behaviors turned out to be statistically significant, as could be expected. Less to be expected was that committed actors for nature were **less concerned with security issues (in other words, their concerns are not a general anxiety), more focused on beauty and less on "enjoying life" (hedonic values).**

Finally, a structural equation model (SEM) analysis was run predicting action for biodiversity (like CAn, above). The final SEM model presented good fit with the data. Action for biodiversity correlates well with values. The weakness of induction shows off here in particular however. Contrary to the deductive analysis where we 'forced' interview-based concepts into the data, the data do their own thing in any inductive analysis. And because the concept of value dominates the social-psychological theories, only correlations with values *could* come out in this case.

Motivations de re and de dicto

In analytical philosophy, a distinction is made between motivation *de re* and motivations *de dicto*. In this, *re* mans 'things' and *dicto* means 'words'. Motivations *de re* are directed at particular things that cannot be substituted with any other. In motivations *de dicto*, we see the valued object as part of a more general category from which substitutes may come. Sometimes, which of the two types of motivation people have in mind is easy to read in their words. When people say, for instance, *Hands off our forest!*, it does not take much imagination that people are not quite interested to swap this forest with another one of 'the same value'. When on the other hand it is said that *This forest has a total economic value of 1 million pounds*, it does not take much imagination to surmise that this expression declares that the forest is just one thing on a list of things-with-values that can be substituted for each other if they have the same value. That, after all, is what the whole valuation effort is designed to do.

Often however – also in the BIOMOT interviews – it is not easy to see immediately what people mean. When people say to be motivated for "gorillas", or "wilderness" or "sustainable fisheries", are these *de re* or more abstract, *de dicto* motivations? With this in mind, we looked at the context of these expressions in the BIOMOT interviews. It appeared that for our committed actors, both types of



motivations are present but that **de re motivations prevail**. Moreover on the face of it, **de re motivation are stronger**.

Biodiversity policies often express a *de dicto* look on nature. Already the term “biodiversity” frames nature as a collection, an enumeration of classes of things. The collection is big indeed; we do have a lot of diversity. But would that be nature, would that be meaningful? The same holds for visions expressed with terms such as ecosystem services, economic valuation, offsetting, natural capital It must be said that at local levels, the policy picture is often not that dire. And also at the EU level, a new concept such as “nature-based solutions” invites much more creative, *de re* responses.

Conclusion: Meaningful nature in meaningful lives

Looking back on this and the preceding section, we can ask: what could be a key notion, a central concept that might capture the depth of what drives committed action? Could it be preferences, or economic *benefits*? With hardly any voice in the interviews and hardly visible in the more quantitative results, they appear to be far removed from the heart of the matter. Could it be the concept of *value*? This appears to come closer; values do appear in the outcomes of the cards ranking, for instance. On the other hand, values are things ‘out there’, static and abstract things that are only poorly connected to action. The interviews underscore this only secondary position of values as drivers. The interviews are about experiences, fascinations, quests, epiphanies, coming home Value is not a concept capturing these dynamics. What it all seems about primarily, it appears, is *meaningfulness*.

On the level of lives as a whole, meaningfulness is about eudemonia, the meaningful life. A meaningful life is not an endless series of happy moments. It is the journey, the quest, the story of searching or slowly approaching a meaningful something, something that makes sense, something that makes everything fall into the right place and synergizes the actor to make a difference in the world. For committed actors for nature, that what makes life meaningful is intimately tied to nature. For many of them, the journey starts out in nature and turns back to it. (Re-)connection with nature, seen as wilderness, biodiversity or garden, is the great driver. Moral values, happiness in the work and other factors can also play important but largely auxiliary roles.

This outspoken conclusion is rooted in the interviews, the cards sorting and the survey (e.g. the factors O and Cn) of committed actors for nature. BIOMOT did not study more ‘common’ actors for nature. Yet, assuming a certain degree of congruence between them and the committed actors, we might venture a somewhat more subdued conclusion for people at large. **People act for nature not primarily for economic or moral reasons; people act for nature because nature is meaningful to them, fitting in a life that makes a difference in the world. Meaning is established especially in early youth, in intensive encounters with nature, often outside adult supervision. Nature anywhere: forest, brownfield, beach, meadow, city park, garden.**

As the interviewees indicated in the cards sorting, “doing things with others” is important in what we have called ‘happiness in the work’. In the interviews, we often see important roles for (peer) groups such as youth associations in the formation of committed actors. And we see actors in turn initiating their own groups in later life. In our theory, this is the middle level between the individual actor and the anonymous grid. We focus on that level in the next section.



5. What drives collective action for nature?

Collective action is action carried out by groups. Any group is more than just the sum of its individual members; it has ‘group-level features’ of its own. For instance, it has a history that is different from the histories of its members. And it can be coherent or not, rich or not etc. quite apart from the character and wealth of its members. This distinction between the members of a group and the group as a whole also holds for the question of what *drives* a group; what makes it energetic and committed to act? First, obviously, this depends on the energy, commitment etc. that individual members bring in. Second however, this depends on group-level features. For instance, members may be very energetic but if they don’t collaborate well, their collective action will be negligible. And the other way around, inspired groups can inspire members even if these entered only hesitantly.

The present section focuses on the group-level features, since the commitments of the individual members have already been covered in the preceding section. So, the question is: *what are the group-level features that enhance the drive, the energy of groups in action for biodiversity?*

The groups in BIOMOT

The groups studied in BIOMOT have two things in common: (1) all were collaborations of public and private actors gathering around specific biodiversity goals, and (2) all were labelled by participants and policy makers as prominent and successful initiatives due to a sustained high level of commitment. On that basis, BIOMOT carried out a purposive sampling of groups in different biodiversity sectors, and within each sector, groups of two types in roughly equal numbers: (a) those that attract participants partly motivated for the economic or other ‘external’ benefits, e.g. government-paid compensations or sale of products, and (b) groups where the participants are motivated mainly for other, non-economic benefits. Economic benefits are not absent in the second type, but they are not the main motivating factor. We will call these *partly economically motivated* and *mainly non-economically motivated* groups.

With mostly five groups in each of the seven BIOMOT countries, BIOMOT studied 34 groups with activities such as the preservation of biodiversity-rich orchards (partly economically motivated), wolf management (mainly non-economically motivated), sustainable watershed management (partly economically motivated), hay meadow preservation (non-economically motivated).

Outcomes

In the interviews, group participants explained the group’s drive to act in terms of internal and external motivations. Internal (‘intrinsic’) motivations are those that work without any reward given by an agency outside the group. An obvious example is the spreading of things the group works for, such as biodiversity or good agricultural practices; they are rewards in themselves. Other internal motivations can be, for instance, the enjoyment of working with like-minded others, learning, pride in creative solutions that appear to work, felt duties that are fulfilled, or the strengthening of endorsed public policies. External motivations (‘incentives’), on the other hand, are the rewards (or avoidance of punishments) given by society or government, such as financial bonuses, marketed goods, job



opportunities or the improvement of reputation (which may in its turn result in more sales, for instance).

As it turned out in the interviews, a few groups (two out of the 34) work on intrinsic motivations only, while another two groups work almost fully on external incentives. ***For the great majority, however, internal and external motivations work side by side.*** A group may take great pride having saved a number of biological fruit varieties and the local identities these strengthen, for instance, but also happily cash in on the sales of these apples on the local festival. Taking another example, a group restoring native woodlands may be driven to do so because of the beauty of wild forest but also to avoid fines or reap compensations from the government. In our data, therefore, that is to say in our relatively well-established, strong and successful groups, we did not find that external rewards undermine intrinsic motivations. This ‘crowding out’ phenomenon may be more prevalent in cases where strong social norms really conflict with external rewards, e.g. payments for blood donation.

The data enable an analysis around the question *which factors foster the expression of intrinsic motivations*. The answer is found by comparing the characteristics of the mainly non-economically motivated versus partially economically motivated groups. We then find that intrinsic motivations to act for nature are stimulated by several factors that are *internal* to the group, such as a strong desire to help nature, a clear and strong group aim, and broad, inclusive leadership. Other factors that foster intrinsic motivations are found in the groups’ context. These contextual factors have a quite practical relevance for policy-making because contrary to external motivations, no-one has to pay up to make intrinsic motivations work. From our data, we find that **the most important contextual factor fostering intrinsic motivations for groups to work for nature is the groups’ level of self-determination**. They need to do their thing *in their own way*.

This implies that if the government wishes to stimulate civil society, farmer groups, business groups etc. that work for nature with little or no financial remuneration, it should find ways to support these groups, e.g. by offering networks, competences or communication channels or maybe even reward their results, but without prescribing or rewarding the way they work.

Conclusion

A summary of the foregoing is straightforward:

- On top of the commitments brought in by their individual participants, groups working for nature can be driven by both intrinsic and external motivations. In our sample of (strong, successful) groups, these motivations act additionally, without visible counteracting (i.e. no ‘crowding out’).
- Intrinsic motivations support biodiversity action without permanent payments from public budgets. The key factor to strengthen these motivations is to respect the groups’ self-determination. Policy makers can offer networks, competences, communication etc. without prescriptions that reduce group autonomy.

On a more reflective level, we must remain aware the just like individual actors, groups are strongly influenced by the general discourses, institutions and structures of society. This ‘grid’ in which groups act is discussed Section 6. The other side of the interactive coin is that just like individuals, groups can set is as their goal to influence discourses, institutions and structures. In the BIOMOT interviews, we



often see that individual actors initiate groups for that reason, strengthening what they can do individually. ‘Making It Grid’ is discussed briefly in Section 7.

6. Grid at work: ecosystem services and systemic demotivation

‘Grid’ is the term we use here for the often invisible ‘preferred directions’ in society – cultural, political, institutional, economic. Grids are like roads: you need them to get somewhere but if all roads lead from East to West and back, you won’t get North even if officially, you are free, e.g. always allowed to go on foot. Going *with* the grid, you find parents that praise you, peers that find you cool, money for your projects, tax exemptions to help out, political parties that like to take you up, courses that teach what you desire, roads that lead in the right direction, public discourses that talk your language, no fences around the nature you need. Grid is the treadmills you enter; the criteria of work place performance. It’s the culture of disrespect for teaching in academia. It’s the tax system taxing labour instead of pollution. It’s the ‘life sciences’ we fund lavishly, now that God is lost, to alleviate our fear of death. It’s the rise of pennywise permanent consumption as the way to happiness. The rise of happiness as the goal of life. The fear of system crash if we would all decide to live simply. It’s the penetration of economics and organized fear (security!) in all spheres of life and society, including scientific programs such as Horizon 2020 and parents taught that responsible parenthood requires permanent supervision and that quality time cannot be had alone.

Going with the grid, you get somewhere without great energy or talent. Going against the grid requires deep, autonomous energy and commitment to not give up. That’s what many of our committed actors interviewed by BIOMOT (see Section 3) have.

Not all aspects of our current grid are unfavourable for committed actors for nature. Systemic anxiety creates much attention for the health effects of nature, for instance. And the current craze for innovation, even if fed mainly by the fear of losing out to China, creates new social norms, e.g. that we all should ‘find and follow our passion’ (i.e. a meaningful life). Maybe today, a child with a passion to know what lives under stones will find more than only a “free-thinking grandmother” (see Section 3) to protect it.

The concept of grid enables a better understanding of what an Avenue (see Section 4) is. An Avenue for action is a locally weaker (suspended, derailed) grid. It allows actors and groups to go against the overall grid without losing much direction and energy. Avenues come in the form of special people (mentors, enablers) but also in the form of groups you can join, new technologies, new regulations, new ideas, new storylines, also policy storylines (“innovation!”).

Since grid is in a way ‘everything’, BIOMOT could focus on only a few specific features. Underneath, we discuss the discourse around the valuation of ecosystem services and ‘systemic demotivation’ as an overall concept to help analyze grid.

Nature gridded: the valuation of ecosystem services

‘Valuation of ecosystem services’ means that economic methods are applied to calculate the value of an ecosystem service for society at large. When all services of a certain place are added up, it is called Total



Economic Value (TEV) of that place, saying for instance that “the Total Economic Value of this forest is 2 million euros”. This amount then refers only partially to actual (‘cash’) money such as money earned with timber or tourism. TEV is the ‘welfare-economic’ total for society at large, hence also including money values attached to the meaning of the forest for biodiversity, local identity, water flow regulation, education, carbon sequestration, child adventures and so on. Weird as this may seem (Shall we swap my local identity with your local identity for € 1000? Shall we also assess the TEV of our schools, our old-age homes, our army?), this way of thinking has ‘become grid’ for biodiversity especially in policy-making. How this has could about is discussed in the next section.

BIOMOT has carried out a systematic inquiry into the downsides of the TEV concept. One of those has to do with social equity, for instance. Take a forest next to a rich neighborhood. That forest will be assigned a high TEV because rich people, being rich, have a high ‘willingness to pay’ for it. Then take the same forest, now next to a poor neighborhood. That forest will have a lower TEV because poor people, being poor, have lower ‘willingness to pay’. Which forest will have to go if we need space for, say, a waste dump? Obviously, the one with the lowest value. That’s best for society as a whole. It’s only logical. It’s gridded-in.

Other downsides of the economic valuation of ecosystem services are that economic valuation ignores the sustainability of services, uses arbitrary techniques, regards total value as only the sum-total of individual preferences, and ignores that in fact, people value nature in ways quite different from economic, benefits-oriented rationality. The latter point is strongly underscored by BIOMOT’s interviews with committed actors for nature (see Section 3).

Systemic demotivation and the countervailing power of stories

Grids contain messages. These are the ideas that are everywhere, the almost self-evident logics, all which ‘goes without saying’, and with that, exert a deep power, often unconsciously, on all of us and, maybe even most of all, on our governments.

‘Formation’ as we discussed in in Section 3 can be seen as a dynamic negotiation between a child’s private desires and the grid messages. What *are* these grid messages? We encountered some of them already at the beginning of this section. Here we focus two others. Both are based on the fact that environmental problems such as climate change or biodiversity loss, to a degree, are system-level problems. The message of the grid simplifies this, dropping the degree. The first message is: *environmental problems are system problems, so there is nothing you can do*. Of course, we may recycle some waste and save some energy, but that really doesn’t make a difference. In fact, looking at all the other contingencies of life, the rational thing is to do nothing. The second message is: *environmental problems are system problems, so there is nothing you need to do*. The system will take care of itself, e.g. through the markets or through the homeostatic feedbacks in nature. Jointly, we may call these messages ‘systemic demotivation’.

The climate problem is highly susceptible to systemic demotivation. The biodiversity problem partially escapes from the first message. Nature is also clearly local; even if we might not be able to save global biodiversity, we can clearly make a difference for our own forest. Biodiversity is quite susceptible to the second message however. The grid image is: it is good to prevent local wrongdoings to nature but essentially, the social and natural systems are separate; the system of nature will take care of itself.



Although this does not make much sense anymore in the present-day Anthropocene, the idea of separation between humans and nature (the ‘nature-culture dichotomy’) is so deeply rooted in Western religions and the spirit of Enlightenment that it will take a long time to evaporate out. In the Western religions, all attention is on the humans-to-God relationship; except in classic Islam, stewardship of nature remains an afterthought. The Enlightenment was about the emancipation of humans out of nature.

Conceptually, the result is a ‘divorce of reason and ratio’, as the philosophers call it. We feel we have reasons to act, but acting is not rational. The effect of that situation is that many people split what they know from how they act, and resign. Other people, including our committed actors, do something very different. They *act anyway*. Because they need to, and in the trust that rationality will be established in and after the act. The philosopher Kant called this the *reflektierende Urteilskraft* (reflective power of judgement). As we have seen, committed actors for nature get the energy to do so – and energy it takes, because the message of disconnection between humans and nature is systemic – through their (re-)connection with nature, helped further by mentors, groups and avenues to act.

At this point, it serves to look back at what the BIOMOT interviewees were actually *doing* in the interviews. What they did was to construct their story of the meaningful life, also telling much about the stories they heard from others and the stories they themselves tell in their work. This is not coincidental. Stories *create* meaningfulness; they order lives, collective actions, natures, landscapes in meaningful wholes. They invite us all to *act anyway*.

This analysis holds implications for biodiversity policy making. They are about helping to weaken the grid messages of disconnection and meaningless valuation, to let the stories of connectedness in, and to help build avenues for inspired ‘upward’ collective action. More about this is in the next section.

7. Reflection: ecosystem services, their valuation and public discourse

BIOMOT has started out from reflections on the ecosystem concept and their economic valuation. Now, with the BIOMOT results behind us, we revisit this theme on a more informed level.

A reflection on ecosystem services: can the concept do positive work?

“You give me everything!” Or, as WWF puts it, “The Earth gives us everything!” Are these statements expressions of love or expressions of economics? The broad notion of ecosystem services can be used in many ways.

Away from strict economic visions, “everything that nature gives us”, whether called ecosystem services or not, can be part of narratives, in a *de re* style. Such stories can be energizing parts of personal and local identities, as we have seen in the preceding sections. They can also be used as part of future visions, of maps and plans. That way, ecosystem services do work for bringing people and communities into action, in spite of the fact that strictly speaking, the ecosystem services concept is only a dead list (“provisioning services”, “regulation services”,). The narrative way of using ecosystem services is characteristically sloppy in the strict economic sense. Biodiversity, for instance, tends to be fully



included in the services, even if biodiversity is in itself not a service at all – many ecosystem services work fine with low bio-diversity as long as we have a lot of green bio-mass.

At the other end of the scale, the ecosystem services concept can and is used as the one and only ‘rational’ way to describe nature, reducing nature to a set of useful processes and things, arranged in a general, *de dicto* classification. At best, this is so dull that no-one takes notice. At worst, this way of thinking, being backed up by powerful agencies and ideology, begins to act as a ‘truth’ that colonizes all other visions of nature, depicting them as irrational, emotional, primitive, pre-scientific, feminine, This is the ecosystem services usage that is part of systemic demotivation, in a movement of first capturing everything (“nature”), then reducing nature to ecosystems, then ecosystems to services, then tearing it apart to form a list, then generalizing this list in *de dicto* abstractions – until no-one feels any energy anymore except some scientists and lots of economists.

A conclusion here can therefore only be a nuanced one. **Between creative narratives and systemic demotivation, it’s all in the use of the concept of ecosystem services that makes it a friend or an enemy of nature.**

A reflection of the economic valuation of ecosystem services

BIOMOT has conducted a Q-sort survey to uncover the ideas (‘discourses’) of economic and non-economic conservation experts on the valuation of ecosystem services. The outcome was that (1) some of the respondents were highly critical of ecosystem services valuation, for reasons discussed already in Section 6, and that (2) some respondents enthusiastically endorsed the valuation idea and all that comes with it, agreeing with statements such as “understanding total economic value of ecosystem services will lead to more effective biodiversity protection” or “a single, monetary value is needed to weigh the value of the environment against other societal goals”.

What to think of this, in view of the foregoing sections? Looking at the *distribution* of the ideas over the sample, we see that almost all economists in the sample strongly endorse the valuation of ecosystem services; all non-economists (and a tiny number of economists) reject the valuation. It is through the economists, carried along by the overall grid wave of the “economization of everything” in our present-day societies, that the valuation of ecosystem services has become so popular among policy-makers.

In the meantime as we have seen, the valuation of ecosystem services is not popular at all among the committed actors for nature interviewed in BIOMOT. Some mention economic values in passing, some express fierce opposition but for the great majority, valuation of ecosystem services is nowhere to be found in any motivation. It does not trigger any committed action.

Now turning our attention to the public at large, we find that *nature* is all over the public media. Obviously, stories of nature are found very interesting. The economic valuation of ecosystem services is nowhere in the media. Obviously, the economic valuation of ecosystem services is found very boring, too boring to be even on TV. Why then would we think that the economic valuation of ecosystem services will *motivate* people and, in the end, policies?

At the level of public discourse, we encounter a tragic situation. Individually, we all love nature but we also think that *the other* needs to be convinced by money values or other rational arguments. It is as if John is in love with Ann, but he thinks that Ann is only interested in services, so instead of



expressing his love, he talks about his map-reading value, his moneymaking value, Likewise, Ann is in love with John, but she thinks that John is only interested in services, so instead of expressing her love, she talks only about her social network value, software knowledge value Blocked from expressing their love for each other, they find each other stupefyingly boring, and part ways. They have had a tragic discussion. **We need languages of connectedness with nature in the public discourse.**

For deciding what we love and what we want, the language of money is nonsensical, demotivating, tragic. Democratic deliberations should and can include all voices, including the voices of connectedness with nature. After having thus decided what we want, it is good to start talking about money, because efficient use of public resources is good. But this money then is not the abstract welfare-economic values of ecosystem services valuation; it is real money of public budgets.

Making It Grid

All this holds a message for biodiversity actors and groups. Many of those are relatively modest people, doing their fascinating thing on a relatively local level, as do most of the 34 groups studied by BIOMOT. This is reinforced by the fact that often, the biodiversity that motivates is local biodiversity indeed, a *de re* phenomenon, as we have seen.

We are all infused by the adage, the grid message, to “Think Globally, Act Locally”. But what can really make a difference is to address not only local circumstances but address the societal grid, i.e. the culture and structures that bind us all. This is to act ‘politically’: addressing the grid from local motivations upward, trying to Think Locally but Act Globally. A group that created a butterfly garden in a Berlin neighborhood does not need to go to the mayor to beg for a subsidy. It needs to go to the mayor (or the media, the meetings) with a message that lifts the butterfly work to ‘grid work’. Why, for instance, cannot the whole metropolis bloom, and become Berlin Butterfly City? Then create an association of European Butterfly Cities? Whatever failures and successes this would lead to, it is an attempt to Make It Grid, changing visions in society and offering avenues for action to many others. For such an action to succeed, you need scientists, bookkeepers (not economists) and, most of all, inspiring storytellers.

Finally, this also holds a message for policy-makers, opinion makers and all others who are shaping the grid of society. First of all, they can identify, cherish and enable ‘working the grid’ actors and groups, e.g. in ways explained in Section 5. And maybe even more importantly, they can help shift the grid itself, by giving more space and adding their own voice to the ‘languages of connectedness’ with nature. One of those languages is the story. And stories of connectedness, as the BIOMOT findings show, are rooted in the true encounters of humans with nature. On the shores of a thousand oceans children play.



8. A too brief summary of A Theory of Committed Action for Nature

Taking the risk of summarizing the life out of the story told by BIOMOT, this page enumerates its main findings.

Core concepts

- Hedonic values, and with that the whole apparatus of economics and consumptive happiness, do not explain committed action for nature.
- Moral values (e.g. of nature or future generations) weakly explain committed action for nature.
- The core concept for understanding committed action for nature is *meaningfulness*. This holds for both the degree and the structure (concepts) of explanation.
- Once meaningfulness is established, moral values and (social) happiness co-explain committed action for nature.

Meaningful life in meaningful nature

- Meaningfulness is connectedness: to people, to world, to Self.
- Meaningfulness is about *eudemonia*, the meaningful life: the journey of searching or slowly approaching a meaningful something that synergizes the actor to make a difference in the world. Making steps in (re-)connecting with the meaningful something is often felt as epiphany.
- For committed actors for nature, that what makes life meaningful is intimately tied to nature. The great majority of their life stories have started out with true encounters with nature in childhood. For many, the journey turns back there in later life.
- True encounter with nature can be experienced anywhere, from the urban brownfields to the great ocean, from the forest to suburbia and the farmlands.
- Parental assistance often helps bridge distances to nature; parental absence however helps true encounter.

Collective action

- Groups and networks are vehicles for committed actors and also open up avenues for other people to act.
- Groups can integrate internal drives and external incentives. In order to maintain their internal drives, however, their autonomy (self-determination) needs to be respected.

The society level

'Grid', hard and soft, denotes the often invisible 'preferred directions' to go in society. Grid is implemented by parents, schools, regulations, tax systems, infrastructure, ideology, An 'avenue' to act is often a locally suspended, derailed grid.

- Much in the grid of present-day society amounts to systemic demotivation to act for nature. One example is the idea that ecosystem services describe our relationship with nature. Another is that nature, in the end, will take care of itself.
- Languages of ecosystem service valuation are tragic; they demotivate all except economists and policy-makers tragically infused by their ideology. We need languages of connectedness back in our public discourse.
- Meaning is transmitted through stories; they are the vehicles that reconnect ratio and reason. Stories are a language of connectedness.

Technicalities

- The domain of this theory is committed action for nature. Many data, including BIOMOT's, allow expansion.
- The acronym of this Theory of Committed Action for Nature is, obviously, ToCAN.

