

# Mapping steps along a pathway to evaluate an experiential transdisciplinary approach to professional learning for ecological researchers

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**Keywords:** community of practice; evaluation; network; resonance; sustainability.

**Abstract.** *This paper considers some issues of debate and evaluative questions about the value, meaning and impact on the participants in an experiential pathway developed within the initiative "Cammino of Feudozzo" (CaFe), a five-day meeting which constituted a further step in a process of constant research into constructing new ways "to be a researcher" and of communicating ecology by the scientific research community. The core of this experience focused on an experiential transdisciplinary approach, designed to reinforce and develop plural, relational, and systemic perspectives, together*

*with a participative observation and evaluation able to help both a collective vision and personal experience to emerge. CaFe was an opportunity for the participants to encounter different languages, narratives, ways of dialoguing, to experience multiple points of view and diverse ways of looking. Its holistic approach also involved the participants' attitudes towards social and spatial relationships. New perspectives, critical thought and visions for more participative processes were fostered by the exploration of physical and emotional experiences which revealed the limits of "being a scientist". Consequently, the evaluation pathways and strategies that were explored required new objectives, methods, and an approach to research that reflected the specificity of the CaFe experience. The evaluation focused on the participants' beliefs, disposition towards the experiences proposed and principally on changes in ideas, attitudes, interests, ways of dialoguing and communicating. This paper examines some general evaluation methods and some significant evidence of self-evaluation by the participants. All the outcomes and issues offer the chance to reflect on the doubts and perplexities of "researchers under pressure" (L'Astorina and Di Fiore, 2018) and their search for innovative models, narratives, and languages.*

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## **1. A generative approach to evaluation**

In September 2019 a five-day meeting called "Cammino of Feudozzo" (CaFe) was held in the Public Forest of Feudozzo in the Italian Molise Region (for a detailed description, see L'Astorina et al., this issue). The aim was to explore possible answers and build guidelines for new ways of doing and communicating ecological research, to offer the participants an opportunity of confronting and discussing different narratives (Allen and Giampietro, 2006), multiple points of view and descriptions of the natural world, including scientific, ecological, artistic, theatrical and mythological, thereby opening transdisciplinary dialogues, promoting openness towards alternative points of view and diverse cultural domains, and seeking agreement on new ways of knowing and viewing ecology and Nature. The focus and the themes of the experience can be summarized in the following research questions: if and how scientific researchers could or should practice a

transdisciplinary vision and enrich science with other kinds of descriptions, knowledge and interpretation of the world, such as artistic-aesthetic, philosophical or mythical; if researchers could or should acknowledge and embrace different forms of narrative and expression to explore and describe Nature, to improve their communication with civil society and dialogue with non-experts; what could be the contribution of emotional approaches to creating new and more responsible attitudes towards Nature and the natural environment.

The holistic approach had the potential to impact not only knowledge and beliefs, but also personal attitudes towards social relationships and experiential ways of living. As Judith Butler (2005) suggests, such an experience takes the form of a subjective, multiple “occupation of spaces” and displacement, constituting research for ways of crossing the gap between a dominant and universal subject looking at and interpreting reality, and a contextual flow of relationships. The complex and unconventional features of the experience can stimulate debate for researchers and other potential scholars on the value of the key leading ideas that emerged and on the impact that the experiences shared had on the participants. The evaluative process described in this paper tries to draw out the strengths of the CaFe pathway and its possible short and long-term outcomes, through formal and informal evaluation procedures specifically designed for the experience.

The specificity of CaFe made it hard to imagine an evaluation process able to do justice to its innovative, interactive, participative framework, its professional self-development goals, particularly connected with relational, transversal and soft skills, its approach to social responsibility relating to science communication and public engagement, its collaborative and teamwork strategies, its call for understanding, critical and attentive thinking, its perspective of implementing new forms of research and participative choices in the participants’ professional and social lives, its thematic and value-oriented horizon aiming at individual, social and environmental sustainability and an improved relationship with Nature.

The evaluation process and strategies were designed as true “field research” and as an integral part of the experimental meeting. The qualitative evaluation strategy chosen allows exploration and interpretation of different features, meanings, ideas and concepts, motivations within processes, events, and behaviors as experienced by the participants, and permits unforeseen information and data to emerge. The evaluation considers two principal research areas: the value and validity of the proposed experiences and their coherence with the CaFe goals and the impact on the participants. The approach was process-based since it focused on assessment of the participants’ possible changes of ideas, attitudes, behavior,

etc., and on their personal awareness or perception of these changes. The impact evaluation, concerned with outcomes in terms of the desired changes connected with a specific experience, derives from constructivist pedagogy (Bruner, 1990; 1996) that identifies in conceptual, attitudinal, behavioral, and value changes the objectives and outcomes of professional learning experiences and processes.

The qualitative evaluation pathway developed around three main dimensions and themes: cultural (meanings, roles, perspectives, narrations, communication strategies, languages); social (collaborative team approach, social learning, community feeling, social relationships, ways of sharing experiences); personal (personal changes, emotions, visions, gaining). It involved both standardized evaluation strategies, such as brainstorming and open-ended questionnaires, together with other procedures involving more subjective interpretation of the data by the researcher, e.g., the analysis of key words and the participants' observations during some specific activities. The evaluators took part in the workshops, seminars and talks, both for reasons of personal interest and development and to conduct participant observation, a qualitative inquiry method which includes the participation of the observers inside a group activity, to analyze the context from the group members' points of view (Semi, 2010). Participant observation can explore and highlight different spheres of personal and collective experiences and allowed us to capture meaningful evaluation elements such as the appreciation, participation, the level of engagement of the participants. These multiple strategies allowed us to survey the participants' reactions in relation to the daily objectives and experiences.

Ongoing brainstorming, debates, and collective questioning, that took place at the end of every working day, allowed us to see how the active participation and the contribution of the participants to the construction of the pathway increased day by day. The brainstorming and the reflection and rethinking of one's own ideas and changes following the various experiences can be considered a highly significant feature of the pathway and key to the evaluative process. For example, the first evening meeting – during which we collectively brainstormed ideas and attitudes towards Nature, the participants' disciplinary visions, interpretation, and descriptions – demonstrated the gap between scientific interpretive models and the “essence of Nature” that many participants perceived, as well as their difficulty in searching for other knowledge opportunities beyond the usual and strongly interiorized mindsets related to disciplinary models. Further brainstorming sessions underlined the participants' gradual openness towards new awareness and sensitiveness, emotional approaches that allowed them to explore Nature in other perceptive, cognitive, and spiritual ways. This emerges

not only from the collective brainstorming sessions and conversations but also the maps of key words compiled by all the participants during the evening meetings after the daily experiences. These maps emphasized the participants' struggles and ongoing changes.

Other experiences and tasks developed to draw out hidden attitudes, emotions and potentialities of the participants provided useful elements for the evaluation process. For example, during the second day the participants were asked to collect some natural objects symbolizing their mood and expressing the key moments of their experiences. This proved highly meaningful for researchers trained to collect natural elements (faunistic, floristic, mineral specimens) following scientific-ecological approaches, and highlighted their endeavor to assume other perspectives, both in their relationships with natural objects, elements, and events and in their expressive and symbolic attitudes. Indeed, their "collections" – gathered in small plastic bags – were expressions of beauty, care, affectivity, emotional participation, creativity, and imagination, probably rarely or never expressed during their daily professional activities in Nature.

## **2. An attempt at evaluating the workshop impacts**

CaFe involved workshop activities in the field, seminars and talks, theater performances and experiential theatrical and mindfulness workshops engaging body, mind, perceptions, and emotions. It was highly stimulating to observe the participants' "visible" reactions, to assess their levels of acceptance and participation, and the impacts of these challenging activities. Participant observation, supported by photographic documentation, revealed the gradual transformation of attitudes and postural changes inside the group, moving from initial embarrassment and perplexity to a sort of global and collective participation, deeply embodied and emotional.

From the collective evening debates, it emerged that these workshops and performances also impacted on communication attitudes, modifying usual and prevailing social and professional modes of expression based on scientific and disciplinary forms of communication, and making way for emotions. The input offered strengthened the social bond within the group by sharing together physical activities and contact. The teamwork improved through sharing stories and emotions, developing trust in the leadership of other group members while exploring one's own limits, building awareness of participating "bodily" in the experiences and with the others.

All the participants declared they had improved their levels of pleasure and wellbeing deriving from the exploration of different stimuli, narrations, and expressive languages. Such experiences, which re-connect with Nature through artistic, intense, and thoughtful practices engaging sensory-motor body systems, generate physical and mental benefits and affective resonances through free movements and foster an immersive experience expanding sensorial perceptions. Stern (2010) describes the “forms of vitality ... a Gestalt that emerges from the theoretically separate experiences of movement, force, time, space and intention” (p. 5), which represent a constant and underlying lived experiences in personal life and social relationships. Movement has a primary role in creating these forms of vitality, since motor areas are actively involved in processing sensory information as well. Mirror neurons, empathy and emotions contribute to frame knowledge, concepts, and ideas (Stern, 2010). Therefore, the integration of artistic approaches and activities which can stimulate sensory-motor and emotional systems in researchers’ training is beneficial, no matter what their disciplinary fields and social aims. The theatrical workshops created forms of vitality and fostered different forms of perception, through movements, contact with the earth and the theatrization of postures, fostering embodied emotions, knowledge, and dialogue with natural elements. The consequent feeling of the limits of “being scientists” had the effect of promoting in the group of “performers” new perspectives, critical concerns and visions for more participative processes.

### **3. Mapping the impact of the pathway through the participants’ key words and comments**

From the first day of the meeting all the participants were requested to express their ideas, feelings, and emotions through key words and to write them on small cards. The request was repeated in three evening briefings, to explore the participants’ concept and attitude changes after the daily experiences. A semantic analysis of the key words of participants helps bring out group perceptions and feelings, creating a word cloud which favors the association of the meanings that the participants attributed to their experiences and perceptions. Looking at the word clouds enables useful elements for evaluation to emerge. The most distinctive key words can be clustered into some macro-spheres connected with emotions triggered by the various activities, metaphors and mind images, personal and collective experiences. The emotional sphere includes words like curiosity, empathy, confidence, harmony, peace, care, humbleness, pathos, intimacy, remoteness, affective closeness, fear (**Figure 1**). Following Elias et al., (1997), the strategies

aiming at discerning and managing or controlling emotions, taking care of other people, making good decisions, acting in an ethically responsible way, and developing positive social relationships, all belong to learning pathways.



**Figure 1.** A map connected with emotional words. Draft by E. Falchetti, M.F. Guida

The meaning of fear is noteworthy. This is a primary emotion in reaction to a danger or threat (Panksepp, 2004, 2011). The experience of novelty and originality provoked some moments of crisis in the participants. Care is also a primary emotion (Panksepp, 2004, 2011) that can be practiced as a life attitude and approach in social relationships and in professional/environmental research. It seems particularly significant that “care” was among the recurrent key words. As van Dooren (2014) argues, care emerges as a particularly profound engagement with the world, and at the same time a vital affective state, an ethical obligation, and a practical labor. As an affective state, caring is an embodied phenomenon, the product of intellectual and emotional competencies. To care is to be affected by another being/fact/situation, to be emotionally at stake with them in some way. As an ethical imperative, to care is to become subject to another, to recognize an obligation to look after another. Finally, as practical labor, caring requires more from us than abstract well wishing, it requires that we get involved in some concrete way, that we do something (wherever possible) to take care of another. In this sense, care is an entry point into a grounded form of embodied and

practical ethics (van Dooren, 2014). The awareness of the value of caring and its practice seems to have been recognized by the participants as part of researcher professional development and personality.

Empathy is another relevant emotion expressed by many participants as driving force of the pathway. Curiosity - another recurrent word - is a motivational status involving a disposition to accept new and challenging experiences. The preliminary introduction to the program probably fostered this fundamental emotion to spark an active participation. Other emotions, such as confidence and love expressed through the key words are meaningful in terms of the positive, pleasurable, intense mood of the participants. Overall, the emotional words reveal the participants' willingness to bring into play their most private and intimate personal traits, encouraged by the special involving atmosphere and by the challenging experiences, an outcome in line with an important aim of CaFe.

A second sphere concerns images and metaphors aiming at expressing and fostering the analysis of participants' professional roles and contexts: ecology, practice, pathway, crossing the boundaries, research, openness, impulse, initial drive, steps on the Earth, directness, block, intellectual barriers, restoration of perception, deep motivation, separation, complexity, fragmentation, matryoshkas, songs, drawings made by sounds and lights, movement. The participants' metaphoric language is highly evocative, rich in suggestions and powerful in creating deep connections among many dimensions of human spirit. This aspect also denotes participation, positive openness and reactivity to the lived experiences.

The third sphere (the personal experience area) includes other evocative words: creativity, willingness, chance, patience, interpretation, space, living and observing, inside and outside, nature, thinking, bodily rooting, rebirth, breaking of enchantments, discovery. All of these are expressions of the main elements of "crisis" and rethinking of personal pathways, with an emphasis on rebirth and discovery. Finally, the most significant aspect that emerges is the value given to relationships. Their value is composed of "collaboration, kinship, sharing of future vision, profoundness of contents and relationships, friendship, membership, belonging". One key word to emphasize is "confidence", recognized by many scholars as key element of social and relational capital. Key words such as together, interconnections, connectivity, exchange, partnership, union, part of a whole, identification/empathy, people, senses, touch and to be touched, spiritual, listening, respect, prejudice and judgments, freedom, restitution, consonance, and resonance, relate to the values nourished by *communities of practice*, a dimension



further explored later in our paper. All these words point to the values that the overall experience triggered or helped recover.

What distinguishes our collective acting is the transformation from feeling part of a group of different trees to becoming a wood, a community of individuals connected by profound networks of reciprocal support (Mancuso, 2020). This distinction leads to a series of considerations on connections, interdependence, being and feeling as an interacting system. The following sentence describes very well the evolution of social relationships among the participants and their shifting towards a real community of practices and values.

**A witness**

Dear Friends,

Thanks for sharing these photos. To relive, re-read and see again, after several days, the emotions lived together has been for me like feeling their scent, light as a caress that warms your heart.

Thanks for all the things told, written, suggested, and sung. Thanks for those unsaid but lived. Thanks for the photos that captured the light. Thanks for the feet that, in contact with the Earth, began to walk together.

CaFe took shape around four key concepts that structured the five days of working together: Cammini, Ecology, Nature, Narration (see L'Astorina et al., 2021). However, the impact at a personal level was generated not only by these themes but mainly by the strength of the collective experience of the group. "I'm myself and I'm not alone. We can do it together". "I felt a greater self-awareness, positive energy, wishing to enter into relationship, desire for caring about the others, attention towards myself and the others". The pathway opened new visions, beliefs, ways of seeing as other participants' comments testify. "I take with me the pleasure of the shared emotions, knowledge and values during these days. I can't yet understand if and how my opinions and beliefs will change". "New ways of seeing and talking about our 'home'. I saw with new eyes, and I appreciated the difference. I discovered new horizons where I'll guide those who decide to walk with me".

The pathway impacted not only on ways of seeing, but also on the perception of others as fellow travelers, on the willingness to share emotions and to be

part of a community. “Less sense of separation from the others (especially others I don’t like), less judgment, more heartfelt connection and a bit of apprehension”.

The experiential value lies also in the embodied knowledge (Barbour, 2004; Gibbs, 2006; Tanaka, 2011) that is built, in recognizing the “importance of shared practices and experiences”, in “being silent to be able to listen and to meditate”, in “the purpose of facing present and futures challenges, feeling the collective responsibility as less of a burden”, in “knowing that other colleagues will do the same”.

Narrative is an expressive practice of huge communicative, ethical, and social value. Plural narrative languages – verbal, artistic (music, visual arts, theater, poetry, etc.) and bodily narrative shapes – have the power to construct or arouse dormant skills and knowledge. The workshop’s narrative pathway introduced theater, photographic art, affective ecology, green mindfulness. Through the narrations built, it stimulated new unknown explorations of the relationships between human beings and Nature, with the aim of nourishing harmonious contacts and relational flows between place, self, community, and the environment.

The overall pathway offered original experiences that were recognized by the participants and organizers as playing a role in professional learning and knowledge building, and in the definition of individual and community identities. The expressive richness of the workshop constituted a powerful stimulus to rethinking one’s own role, the way of planning and developing professional work and communication modes, and to searching for “an interweaving of abilities” and “peace of the soul”.

One of the main goals was to find themes and relationships in different contexts (not only scientific ones) that enabled identifying transdisciplinary actions and strategies for an ecological transition. Strategies – languages, methodologies, tools – that can encompass personal, collective, and contextual transformation. Some changes at personal and collective levels emerged at the end, as participants expressed a shared sense of Nature, willingness to deepen the relations between science, communities, and societies and “the validation of values that I had inside myself and the awareness of the need and the power of creating community to turn values into a real strength”.

#### **4. A vision of the overall impact of the experience**

A final evaluation phase for the overall experience was carried out by a questionnaire for the invited researchers, administered two weeks after the workshop, to

allow them to rethink their actions, memories, knowledge, perceptions, doubts and thereby build a general overview of all the experiences participated in and their possible impacts. Some questionnaires provide short answers, some other offers wider comments, but all the answers give the impression of being genuine and generous. The first results and comments obtained through the questionnaires would seem to confirm the validity of the pathway approach, its effectiveness and impact on the participants' training.

Some impacts appear very interesting in their potential for long-term effects. The impact indicators selected for the questionnaire analysis were appreciation, enjoyment, interest, knowledge and skills, attitudes, behavioral and value-based changes, together with inspiration for new visions. There was a general agreement among the participants about the value and quality of the meeting, with different reasons connected to factors like different personalities, expectations, previous experiences, and desires: "for the friendly and constructive atmosphere", "for its novelty", "for the richness of the proposals", "for the high quality of the experiences"; "for the emotional and participative approach"; "for its values going beyond expectation" "for its power to spark thoughts". All the opinions agreed on the soundness of the organization, the quality of the proposal and working styles. All the comments expressed the pleasure and enjoyment of the participants for the unforeseen human value of this meeting. Many participants described discovering that they can also feel good being together with their colleagues and during a demanding workshop, and that it is possible to open themselves to more truthful, confident, constructive, and friendly relationships. Despite their diversity, all the answers revealed a need and desire to go beyond a daily working and relationship routine that seems "flat", homologated and without passion.

The pathway seems to have set in motion or allowed to emerge several interests that were embryonic or undefined before the meeting, and which come out with great clarity and awareness. Within this cultural dimension there is a wide variety of answers focused on social themes and relationships (with colleagues, other researchers, citizens) and on the need or willingness of science communication to deal with Nature in a more intense, warm, qualitatively appealing, and less schematic way. Desires and wishes are expressed for the deepening of the newly explored techniques, methodologies, themes, that the workshop showed to be inspiring, promising, or challenging. Personal research and pathways (one's own ways of thinking, emotional quality, human and professional contacts) appear both as a need and an aspiration, stimulated by the various experiences.

The answers reveal mindful changes and acquisition of knowledge and skills related to different meanings and reasons, personal expectations, interpretations, and values. Some focused on “macro-themes” and others on details of our debate, some identified new knowledge linked to disciplinary topics and some pointed to new activities, abilities, competencies, and emotional skills. All the participants felt these were enriching and a starting point for further knowledge and achievements.

The answers also reveal changes of attitude and values regarding different expressive modes, rarely used in disciplinary and professional communication, discovering borderline experiences, overcoming disciplinary boundaries, and appreciating the work of professionals who experiment non-academic ways of knowing. All the participants felt the professional learning impetus (cognitive, sensorial, emotional, expressive, communicative, empathic) deriving from the various activities performed during the workshop and appreciated the deepness of the thoughts, the intensity of the engagement, the empowerment of the social contacts and positive relational modalities. They all believed they were more sensitive, interested, willing to experiment and, above all, keen to incorporate new values in their professional lives and personal relationships. They manifest an openness to new projects and innovation in their work, new values and strategies, new social relationships with colleagues and others. They express the desire to improve or make more effective their communication modes, to exchange and spread increasingly responsible messages about Nature and the environment, to build relations based on confidence, collaboration, and human qualities, to educate young people to the importance of these values, to encourage within their research contexts the use of alternative frameworks and practices. Many proposals emerge from the questionnaires, together with requests for deepening themes and experiences and organizing further experiences of the same kind.

## **5. Building and reinforcing networks as an added value of this experience**

The participative and innovative design of this CaFe pathway opened new horizons and strategies able to reinforce and develop plural, relational and systemic approaches.

The impact on the network of the participants – each one a member of other networks – that met and interacted can be considered an added value of this experience. Networking provides a framework for people who interact, collaborate, share values, attitudes and approaches that guide their collective

working. The LTER network plays an important role for researchers and other professionals working with ecosystems at local, national, and international levels and the CaFe experience is one of many initiatives based on just such a networking bond. Its strength and relevance lie in the web of relations reinforced over time between the network members and the dialogue opened with other researchers, professionals, and lay people. Some elements determining the quality and relevance of a network are its continuity and life cycle, its density, in terms of the extent of the connections among the network members, its accessibility, related to the potential to get in contact with each other, the rate of connection and relations among the members, as well as the clusters that are the higher density elements of the network particularly powerful in the thoughts, meetings and debate organized by the network. In this respect, the network of researchers and professionals who conceived and carried forward the pathway showed a creative, relational, and organizing capacity able to construct a unique and involving experience for its themes and strategies, and at the same time to reinforce itself and to translate this experience in a shareable documentation and applications. CaFe enabled the LTER network nodes and clusters to increase thanks to the contacts, meetings and collaboration realized and improved the quality of the network through innovative, challenging, and thoughtful strategies and experimentation.

This networking leads to wider consideration regarding the communities of practice (Wenger, 2002) fostered by the connections between knowledge, community, learning and identity. This becomes a system of collective social learning which all the participants can access and in which each member shares the experience of the others. In this way learning is essentially an experiential and social process that promotes the negotiation of new meanings inside a community. While some approaches see learning more as an individual process, for Wenger (1998) it is a result of an active participation in community practices and of a process of identification with and belonging to the community. The LTER network creates opportunities to facilitate collective social learning and experiences, while taking account of subjectivity, personal meaning, social framework, practices, and identities. CaFe developed four fundamental levels characterizing a community of practice: practice as a social production of meanings (a common semantic), as a source of the community coherence and cohesion, as a process of continuous learning, and as a definer of boundaries. These themes stimulate many diverse thoughts and challenging visions and convictions in the process of negotiation of meanings, the commitment to the realization of common actions and enterprises, the existence of skills, tools, stories, relations characterized by an identity. The pathway involved participants in bringing new knowledge, visions, and experiences, all implying revision of the same community practices,

and offered an opportunity for all to face their own limits, boundaries, doubts, and fears through a process of sharing of emotions. This process constitutes a chance for learning, as proposed by emotional intelligence theory (Panksepp, 2004, 2011; Gardner, 1983) and by Social Emotional Learning, (Gardner, 1983; Goleman, 1995), and as described by Böhme (2010) when we enter a special mood and relationship with the different emotional tones activated by the path, the place, the relationships.

This aspect recalls the “aura” defined by Benjamin (2010) as “a sort of undetectable and pervasive influx, a distant apparition, an emotional modality generating an imaginary distance” (p. 10). “If, while resting on a summer afternoon, you follow with your eyes a mountain range on the horizon or a branch which casts its shadow over you, you experience the aura of those mountains, of that branch” (p. 10). The aura relates to the emotional distance which can be perceived starting from the emptiness which interposes itself between men and things and becomes a mind space. The landscape itself is no longer something outside us, and all of us are landscape. The pathway is based on this assumption “to create a spatial symphony” and on to come into resonance with *emotional tonalities* (Catalano, 2020, p.13). A harmonic match with the environment is achieved - as with music - by tonal chords. To conform to a certain or same tonality allows tuning or harmonizing of inner and outer worlds (Bollnow, 2009). Only within this kind of emotional atmosphere can real contact with objects, perception of things and people, and encounter with the world happen.

## 6. Ongoing reflections while walking

What could we learn and continue to discuss through the evaluation of the CaFe, concerning the immediate and visible outcomes and changes? What other issues can this experience trigger? The evaluation was built on our expectations, on the assessment of the experiential impact on the participants’ personal and social pathways, knowledge and skills, on the possible changes in their perspectives towards more pluralistic visions, narrations, relationships with themselves, colleagues, and the environment. All of these are critical objectives and themes, worthy of debate and thoughts.

To face the limits of being a scientist seems to have given rise to new critical thinking and visions for more participative processes to become or improve a community of practice. In this sense the experience can offer indications for sharing and launching similar projects.

Le Breton (2010) states that walking means opening up to the world: “Walking plunges into an active meditation that stimulates a whole sensorial participation. We walk for any reason: for the pleasure of enjoying the time passing, to discover unknown places and faces, or just to answer the beckoning call of the route. Walking is a peaceful way to reinvent time and space. Walking requires a joyful humbleness in front of the world” (Le Breton, 2010, p. 93, translation by Ester Donnetti). CaFe was a time and a place for awareness, exchange, and discussion, thought and stimulus for change. “Being on the way and moving towards what can change”. “Let’s move towards change”. “My way of being and walking has changed. I take home the desire to widen my community, and to think at length about my steps of yesterday and tomorrow”. The change can be at the personal level, “I’m walking towards myself and my relationship with Nature”, involve the richness of walking in the community, “On the way creatively and without judgment, together with this magic community”, or the validation and the support in pursuing the path, “The experiences lived on these days revealed how right my walk was”.

In this way, CaFe can be considered a small step towards a Responsible Research and Innovation (2020) pathway, in which sustainable goals are pursued by integrating innovative, transdisciplinary strategies into the professional learning of researchers, by improving the dialogue with different social actors and professionals, by introducing in the field of ecological research values and attitudes connected with peace, democracy, wellbeing of the planet and all its inhabitants. This within the context of a debate on researcher professional development. Along researchers’ training pathways, much technical-scientific expertise is mainly promoted in university and postgraduate schools or research centers, while other transversal and affective soft skills, together with knowledge and practice of other interpretative and communicative modalities are seldom introduced. A quick glance at Internet on programs for researchers shows great attention towards technical disciplinary and managerial competencies, towards procedural skills, but low interest for interpersonal skills useful for public communication and social dialogue. Only very rarely does emotional intelligence appear among the soft skills of the researchers.

As an example, the Research Development Framework of the Edinburgh Napier University includes four domains: Domain A – Knowledge and intellectual abilities: the knowledge, intellectual abilities and techniques to do research; Domain B – Personal effectiveness: the personal qualities and approach to be an effective researcher, e.g., personal qualities development advice and examples, enthusiasm and perseverance, integrity, self-confidence, self-reflection,

researchers' responsibilities; Domain C – Research governance and organization, knowledge of the professional standards and requirements to do research; Domain D – Engagement, influence and impact: the knowledge and skills to work with others to ensure the wider impact of research. Maintaining a healthy work-life balance is also included among the researcher's abilities.

The EU Commission Directorate General for Research & Innovation (2011) published the Research profiles descriptors. These profiles include individuals doing research under supervision in industry, research institutes or universities, together with doctoral candidates. This new classification draft aims to communicate the various characteristics that researchers may have throughout their career. It describes four broad profiles that apply to all researchers, independent of where they work in the private or public sector: in companies, NGOs, research institutes, research universities or universities of applied sciences. Regardless of a particular profession, one can outline broad profiles that describe the different characteristics researchers may possess. In this description of researcher profiles, the ability of communicating with society is added only as a desirable, but not necessary, competence.

Ecological researchers should learn how to engage in social dialogue and fundamental elements of such professional leaning processes can be summarized in terms of “ecological thinking” (Morton, 2012), ecology of mind (Bateson, 2000), and critical, complex, systemic thinking (Morin 1999, 2000; Sterling, 2003; Tilbury & Wortman, 2004), all of which are essential to changing environmental relationships and policies. The researcher should know, interiorize, and practice these forms of thinking. Ecology is a scientific discipline that can greatly influence post-modern societies and is best able to promote innovative thinking and lifestyles. Ecology is vital for the way in which political, economic, cultural, social, environmental and value decisions and responsible behavior are implemented (e.g., ecological art, ecological thinking, community ecology, social ecology, ecological materials and products). Ecology is a powerful tool of integration for complex transdisciplinary narrations and has been instrumental in disseminating systemic thinking. Ecology has developed historical models for ecosystems and opened new horizons for landscape ecology, promoting acceptance of its epistemological and procedural innovations and scientific debates. Ecology has promoted the concept of sustainability, providing guidelines for worldwide scientific and political trends. Ecology can promote new awareness and ethical and social attitudes and values. Current societies have been described by scholars from many fields (and from many points of view) as far from Nature, anti-ecological, super-technological, conflicting, individualistic, subject to economics and



marketing, unsustainable, unsafe, “liquid” – by scientists (Capra, 1983; Shiva, 2005), by sociologists (Morin, 1999, 2000, 2004), by philosophers (Bauman, 2011, 2014); by religious guides (Thich Nath Han, 1993; Pope Francis, 2015), by artists such as Munch e Warhol. The responsibility of the ecological researcher goes well beyond the domain of scientific research and is connected to fundamental social-cultural planetary challenges.

What Ecology, then, and what researcher? Morin (2004) argues for a complex, interrelated dimension of the eco-socio-system as the only opportunity to redress planetary problems. The researcher should learn to understand, describe, and manage “ecologically” socio-environmental complexity and to explore alternative epistemological, philosophical, cognitive, social interpretations, narrations, and languages *of the* and *on the* environment. CaFe offers just such a perspective for developing the profile and action of the researcher.

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## Competing Interests

The authors have declared that no competing interests exist.



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