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Where does it come from? *Collaborative emergence* in creative work practices¹

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&

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Abstract

This article presents a case in which analytical tools coming from the tradition of distributed cognition are able to account for what has been defined *collaborative emergence* (Sawyer & De Zutter, 2009; Sawyer 2012) in creative practices. With this article, we aim to contribute to the debate of distributed creativity by discussing an empirical case of *collaborative emergence* and providing the analytical tools able to account for its analysis. Introducing the concept of a *creative network of interactions*, we stress the importance of selecting, describing, and analysing the interactions that give rise to the collaborative emergence in creative work. Introducing the concept of *collective creative imagination*, we account for the collective emergence of the scene. We suggest that collaborative emergence is the result of a process of collective coordination and improvisation, emerging from moment-to-moment contingency in collective cognition and imagination. The new unpredictable outcome does not emerge from a sudden singular intuition avulsed from the environment, but it is the result of several coordinated steps made by the participants.

Keywords: collaborative emergence; creative network of interactions; collective creative imagination; creative practices.

1. Introduction

In the last few decades, several scholars have challenged the traditional concept of creativity by claiming that the concrete domains of the real world give a better understanding of situated creative processes (Glăveanu, 2010a,

¹ The article is a collaborative work and has been thought and planned by both the authors. In any case, if for academic reasons it has to have a specific individual responsibility, consider Laura Lucia Parolin has written the following paragraphs: §1 §3, § 5.2; Carmen Pellegrinelli has written the following paragraphs: § 2, § 4. § 5.1; the conclusion (§ 6) have been written by both together.

2010b, 2014; Glăveanu et al., 2019; Purser & Montuori, 2000; Sawyer, 1995, 2003; Tanggaard, 2013). This stream of research is interested in the processual dimensions of creativity, focusing attention on the situated practices of relationships between actors involved in creative action. Therefore, creativity is not reduced to personal traits or characteristics but is conceived as a process (Sawyer 2012; 2014), a phenomenon distributed between people, objects, and places. However, as pointed out by Sawyer and De Zutter (2009), there is still a lack of understanding of the collective creative process:

Even though we now realise the importance of group collaboration, we still have very little understanding of the exact mechanisms whereby creative products emerge from groups. And we have very little understanding of the relationship between the emergent creativity of the group, and the individual creative actions of each member of the group. (Sawyer & De Zutter 2009, p. 81)

Following Sawyer and De Zutter, this article strives to contribute to overcoming the existing lacuna in creativity research, analysing a case of collaborative creation in theatre artwork. Using interactional analysis, as suggested by Sawyer and De Zutter, this work aims to document the complexity of creativity emergence from collaborative networks.

By following a specific moment in the genesis of new theatre production, the article shows how interactional mechanisms work in collective creation and demonstrates that novelty does not emerge from the mind of an individual - in our case the playwright/director or the actors who propose new lines - but from collective cognitive processes and collaboration.

The structure of the article is as follows: The first section begins with the presentation of recent theoretical approaches to distributed creativity and their root in distributed cognition. The second section introduces the concept of *collaborative emergence* proposed by Sawyer and De Zutter as a useful analytical construct to study distributed creativity. The third section presents empirical research with a brief outline of the research methods employed. The fourth section is dedicated to a detailed analysis of the empirical case that we are claiming is a case of collective emergence. The first subsection (5.1) is dedicated to the analysis of what we call *the network of interactions* while the second subsection (5.2) dedicated to introducing the concept of *collective creative imagination* to account for the collective emergence of a new scene. The conclusion returns to the literature of distributed creativity, showing how to account for *collaborative emergence* in theatrical work as well as any group-based creative work.

2. The cognitive roots of distributed creativity

The study of creativity emerged in the 1950s from cognitive science and psychometric studies as a distinct field of research that characterised both the features and the epistemological definition of the phenomenon. Glăveanu

(2010a) presents a typology of the different paradigms related to creativity. The first, what he calls the “He-paradigm,” specifies that creativity is the genius of gifted individuals. The second, “I-paradigm,” has a similar focus on the individual but presents an equal distribution of creativity in the population. The third, the “We-paradigm,” conceive of creativity as embedded in, and influenced by, the predominant social context and vice versa. This new perspective, born from within sociocultural psychology, investigates the distributed cognitive dynamics of creative acts (Sawyer 2012). According to this perspective, distributed creativity is a complex process of coordination between human and non-human actors that takes place in a situated ecological environment (Sawyer 2003; 2012; Sawyer & DeZutter 2009). Embracing the We paradigm Glăveanu (2014) describes the concept of distributed creativity not as a thing “but an action in and on the world” (p. 9). The idea of distributed creativity is rooted in the recent development of cognitive science and the philosophy of mind (Sawyer 2012; Glăveanu 2014). Following Cash’s (2013) description, Glăveanu (2014) suggested that three primary “waves” critique to classical cognitive theories have contributed to the concept that “human cognition is always situated in a complex sociocultural world and cannot be unaffected by it” (Hutchins, 1995, p. xiii).

The first approach mentioned by Cash (2013) is the so-called first-wave extended cognition approach (Clark and Chalmers, 1998). This perspective does not consider the mind to be contained only within the boundaries of the skull, but also refuses the concept that the mind is something completely external. Clark and Chalmers propose the idea of active externalism, in which environment plays an active role in driving cognitive processes. External objects support cognitive processes. Mind and environment work together as a "coupled system." The idea is that we can recognize the processes of external objects during cognitive tasks as integral to cognition.

The second wave mentioned by Cash (2013) refers to cognitive interactionist promoted by Menary (2006, 2007, 2010) and is named the second-wave integrationist cognition. Menary argues that external cognitive resources augment and complement the mind’s cognitive capacities, rather than duplicate internal mental processes. Compared to the first-wave extended cognition approach, Menary limits the boundary of the cognitive system, embracing only those complementary external resources integrated with neurological processes (Cash, 2013).

Finally, the third-wave distributed cognition shifts the focus from individual-centred theories to a social and culturally distributed perspective. As claimed by Cash (2013), this wave sees individual cognitive activities as socially constructed and supported by the community’s tools, institutions, and practices. Therefore, the mental and social plans integrate within a wider cognitive system.

Edwin Hutchins has brought one of the significant contributions to the third-wave theories of distributed cognition through his ethnographic study of navigation. His research points out that individuals never perform tasks in isolation but rather in relation to other people and in connection with the material world (Hutchins, 1995). Doing

so, Hutchins expands the unit of analysis of cognitive phenomena by introducing the collective dimension. Cognitive work is distributed among individuals, between the elements of the material environment, and over time (Hutchins, 2001). Human cognition is always situated in a complex socio-cultural world and is deeply influenced by it (Alby, 2014).

History and context and culture will always be seen as add-ons to the system, rather than as integral parts of the cognitive process because they are by definition outside the boundaries of the cognitive system. (Hutchins, 1995, p. 368)

Inspired by Hutchins and third-wave distributed cognition, creativity scholars (Sawyer 2003; 2012; Glăveanu 2014), stresses the connection between distributed cognition and creativity. Following the traces of the recent developments of cognitive science and mixing them with contributions from distribution in cultural psychology, they propose to use the term distributed creativity to overcome the shortcomings of methodological individualism in creative studies (Sawyer 2012). The idea is, metaphorically, to think of creativity as outside the box of the mind, embracing a sociocultural prospect, able to take account of the complexity of the phenomenon. When one breaks down the dichotomy between “inside” and “outside,” creativity is seen as an action distributed between people, objects, and places.

3. Using distributed creativity as a theoretical framework: the concept of *collaborative emergence*

Sawyer and De Zutter (2009) recognize how creativity is embedded in a social group and how networks of collaboration between people generate creative products. Sawyer, in particular, is interested in group creativity (Sawyer 2003; 2012; 2014) and proposes to use the term *distributed creativity* to refer to the action of collectively generating a new product. Focusing on creative processes instead of the products, *distributed creativity* allows bringing insights from distributed cognition and the tradition of situated social practices to describe how does the creative output emerge from a situated ecology of interactions (Sawyer 2003; 2012).

Through the right methodological lens - Sawyer and De Zutter maintain - is possible to account for the moment-to-moment contingency of collaboration and the process of coordination in creative work. Therefore, the authors do not reduce the emergence of the creative outputs to participants’ intentions but explain them as the result of the flow of interdependent interventions. To account for the mechanism of generation inside a distributed creative process, Sawyer and De Zutter (2009) introduce the concept of *collaborative emergence*. Collaborative emergence refers to the emergence of a new product or creative outcome resulting from collaborating groups that are relatively unconstrained. As pointed out by Sawyer and De Zutter (2009), these kinds of activities (a) have an unpredictable

outcome, (b) are into moment-to-moment contingency (is thus situated), (c) express an interactional effect of the action that can be changed by the subsequent actions, and (d) are collaborative processes.

As pointed out by Sawyer (2003; 2012; 2014), theatrical improvisation and music jam session are ideal types of group creative processes in which *collaborative emergence* can be better understood. Moreover, these situations can provide insights into how to study creativity processes that take place within groups.

“Group creativity is particularly important in the more improvisational genres of performance: jazz and improvisational theatre. Although group creativity is found in all groups, improvisation is particularly interesting because it exaggerates the key characteristics of all group creativity: process, unpredictability, intersubjectivity, complex communication, and emergence.” (Sawyer 2014:5).

Working with Sawyer’s suggestion, we are interested in understanding how *collective emergence* works in group-based professional practices - in our case theatre rehearsals – in which some of the characteristics of theatrical improvisation coexist with more constrained activities connected to the staging. The rehearsals of a play is a semi-structured group-based creative practice where the emergence of a creative product takes place. During the practice, the scenes are defined, and new creative output can arise.

In Sawyer and De Zutter’s (2009) view, analysing creative situations in the context of collaborative emergence means to abandon the reductionism and explaining phenomena with a situated retrospective interpretation. The emergence of creative research requires methods able to account for complex dynamic systems—systems with many elements, organized into multiple levels of subcomponents, with multiple interactions among elements and subcomponents (p. 83). According to the authors, it is essential to analyse *collaborative emergence* as a discursive, distributed process of interactions.

4. The empirical research and methods

This article presents empirical research carried out by following the processes intrinsic to the development of a new play by a small professional theatre group based in Northern Italy, where one of the authors works professionally as playwright and director. We studied the production practices of a drama play, titled *Ruote Rosa* (*Pink Wheels*). Both the writing and directing were entrusted to one of the authors of this article who had already worked writing and directing the previous five plays of the group. The involvement of one of the authors in the creative process provided for full and privileged access to the field, which is usually difficult to achieve in creative work. This type of participation in the field was a crucial means by which we could trace the heterogeneity of the contributions, triggering reflections about the mechanisms of creative actions in its very process of emergence.

Following the suggestion by Sawyer and De Zutter (2009), we have explored this creative case through interactional analysis’ inspired methodology of video-recorded material of the rehearsals. As pointed out by Jordan

and Henderson (1995), interactional analysis is an interdisciplinary method for examining the interactions of people with each other and with objects in their environment. At the core of interactional analysis, there is the use of video recording of naturally occurring collective activities. Such a tool let researchers gather data of both verbal and non-verbal actions. As argued by Jordan and Henderson (1995), interaction analysis is rooted in the idea that knowledge and actions are social, situated in social ecologies, and engaged with the material world.

Following Jordan and Henderson's (1995) proposal, we gathered several days' worth of video recordings, where we were able to capture a significant portion of the rehearsals of the play. Our purpose was to find out how a new idea emerged from the recurring patterns in collective creative behaviour. We found the beginning of the process particularly interesting, and we resolved to examine the first day of rehearsal together with the recording of the performance during its *premiere* held at Giuseppe Verdi Theatre in Milan (Italy).

Also, we developed a triangulation of data to create a more vibrant picture of the phenomena by using different methodologies (Denzin & Lincoln, 1994). By using several data sets—such as ethnographic observations, ethnographical interviews, an auto-ethnographic diary (Alvesson, 2003), and the aforementioned video and audio recordings of the rehearsal sessions and the *premiere*—we were able to develop an in-depth analysis of the web of contributions that led to the collaborative emergence of the new scene.

4.1 The empirical case

The empirical research was conducted by examining the production process of a new play developed by a small professional theatre company that featured three actors: the two who compose the company (Federica and Michele), and one hired for the occasion (Laura). The play, titled *Pink Wheels*, is a children's show based on the story of Alfonsina Morini Strada. Alfonsina was the first female athlete in the 20th century to participate in the national cycling race 'Giro d'Italia'. As reported in the theatre show's presentation, the play is a story of women's emancipation:

Excerpt 1.

Alfonsina Morini Strada's biography inspires the play. It is the story of a woman who, at the beginning of the 20th Century, challenges all conventions and decides to become a cyclist. She wins many races, and in 1924 she is the first woman ever to take part in the Giro d'Italia. Hers is a story of emancipation, but at the same time, it is an anti-heroic story, made of enthusiasm, struggle and high ideals. Throughout her life, Alfonsina tells us of two equally strong passions: that for the bicycle and that for freedom from gender stereotypes. Nearly one century has passed, but we still need a story like this (excerpt from the presentation text of the play).

The play was based on purpose written text made by the playwright/director. However, when rehearsals began, she had produced just a provisional draft of the script. This first draft was very schematic and provisional and did not specify the positions and movements of the characters, which would be characteristic of a mature theatrical script. It is during the rehearsals that the composition of scenes, including the characters' gestures and movements, become defined and crystalized, and only then, it is inscribed—albeit always partially—in the script.

As the following of the article will clearly show, the composition of the scenes emerges from the group work in the rehearsals. Nevertheless, the group does not work unrestricted as in theatre improvisation described by Sawyer (2003; 2012; 2014). On the contrary, using the draft of the script as a tool, the professionals work to define, little by little, the whole composition of the scenes. If the initial script only presents dialogues and monologues, it is in the rehearsal room that the actual scenes as they are performed are defined (including gestures, movements, images, illumination, sounds, music, intonations, and also new lines of text). In this process, however, characteristics of *collective emergence* take place, and new unexpected outcome arise.

The new play under scrutiny was supposed to use the technique of the overhead projector together with the actual acting of actors onstage. The overhead projector, coupled with the projection screen, is a theatre technique that allows for multiple ways to present the situations and characters onstage—not only embodying the actors but also images (extemporary drawings, illustrations, or photos) and shadows. Therefore, the use of this technique allows for staging a series of scenes beyond the means of a classical theatrical setting characterized by the presence of actors onstage.

Through a microanalysis of a fragment of the rehearsals, we observed and described the emergence of a scene. The videos recorded on the very first day of rehearsals allowed us to analyse the interactions, thus accounting for the unfolding of the distributed creativity process. In this way, we could account for the emergence of the scene as an “object yet to arrive” (Beaubois, 2015) as it has been developed in the rehearsal room. Thus, the focus here is in professional practices where a new creative output is developed. During this distributed creative process, new creative ideas arise. The situation described here is common to most of the creative professions where a group is responsible for the definition of creative outputs.

5. The analysis

This article analyses the creation of one of the initial acts in the play. Here Alfonsina, the protagonist played by Laura, chats with her mother, played by Michele, about her future while they are embroidering. The scene depicts the feature characters and shows the nature of their relationship. The mother desires that her daughter become a

good embroiderer and, according to the gender expectations, soon get married. Meanwhile, Alfonsina wants something else for her life, and she is very bored by her mother's requests.

In the final version of the play, the scene is a dialogue between the two characters. The mother asks Alfonsina to embroider with her and Alfonsina meekly agrees. While embroidering, the mother praises Alfonsina's ability to embroider and, looking at the image of the embroidery (Figure 1), declare her displeasure for not being able to read what Alfonsina writes in her needling work. The images that participate in the scene are embroideries with the writings "I cannot take it anymore", "help" and "Save me". These images are projected on a screen on stage. The composition of the scene, as the following of the article will show, is not fully determined by the scripted play, nor it is already in the head of the director. It rather emerges from the group during the rehearsals where elements are mobilized, new ideas tested, and the definition of the scene occurs.



Figure 1. Photo of the scene during the *premiere*. The mother and Alfonsina embroider together. The mother looks at the image projected and praises Alfonsina for the quality of her embroidery while declaring not being able to read what Alfonsina writes in her embroidery. The projection shows Alfonsina's embroidery with the writing "I cannot stand it any more". Photo courtesy of Enzo Mogni.

As shown by the following analysis, the scene was composed through the contribution of the participants, using the available resources (the draft of the text, the contribution of the overhead projector technique, etc.) as well as improvisations that add new lines of text to the scene. In the initial script, the mentioned scene essentially consisted of a monologue played by the mother. However, reading the text aloud promptly became a scene where the presence of Alfonsina is requested.

5.1 Creative network of interactions

The first day of the rehearsal, the group reads the script while sitting on the stage. However, in a short time, the reading becomes more dynamic, and the scene is played out as they read the script while standing and taking the space.



Figure 2. The group is reading the first draft of the script during the production rehearsals in the rehearsals room. From the left: Carmen (playwright and director); Federica (Luna and Gnac actress); Laura (adjunct actress); and Michele (Luna and Gnac actor and cartoonist).

Shifting from a static reading situation to a spatial one forces the group to consider other elements of the performance's composition. Actors' movements and gestures are commonly left out from the script and defined by actors and the director during the staging phase². Moreover, in this case, the participation of characters in the scene is also reconsidered. As we already noticed, in the playwright's script the scene was a mother's monologue. However, when Michele starts to read aloud the mother's text, he perceived the need for the presence onstage of Alfonsina's character. In the next excerpt, we will see Michele struggle with uncertainty when dealing with the interaction between his (the mother's) and Alfonsina's characters.

Excerpt 2

PLAYWRIGHT/DIRECTOR: Then, starting from now, you become the character [*Michele is already on stage at the end of the previous scene in which he interprets another role*].

MICHELE: I became the mother...

PLAYWRIGHT/DIRECTOR: Yes.

MICHELE: Alfonsa, Alfonsa! Come back here; you don't want the village to gossip about you. You are rowdy!

FEDERICA: [*Interrupting the acting*] Nice if she had a big butt... slamming a pillow... Alfonsa!

MICHELE: And then she arrives. . . because I am telling her. [*He turns from the front orientation to the public to his left, indicating an imaginary engagement with another character in the communication—see Figure 3*].

PLAYWRIGHT/DIRECTOR: She could also be a drawing.

MICHELE: Look at your shabby dress!

[. . .]

² The positioning and movement of actors, known as “blocking”, are usually left to the production of a play, rather than specified by the playwright. The term derives from the practice of 19th-century theatre of working out the staging of a scene on a miniature stage using blocks to represent actors.

MICHELE: Come on, you that are so good at sewing. Sit here close to me.
[Michele goes to find a chair...]
PLAYWRIGHT/DIRECTOR: Here, I need to understand if Laura [Alfonsina's interpreter] is on stage with you.
MICHELE: Maybe, she could be a drawing before, and then it could be her [in person].
PLAYWRIGHT/DIRECTOR: Yes.
(Minute 7:00 of the video VID_20170202_183234)

The issue of the presence of Alfonsina on stage, together with the consideration of different solutions, emerges in the situation by dealing with the problem of orienting Michele's body (Figure 3). Reading a text that is written as a mother's monologue, but it is addressed in the first person to Alfonsina, open up the issue of her presence onstage. Her participation in the scene can be achieved with options other than just the presence of the actor on the stage.



Figure 3. Michele stands and performs the mother's character while Federica and Laura are reading the first draft. Carmen (on the right in the picture) is observing the scene from the point of view of the audience. Performing the monologue addressed to Alfonsina, Michele is turning to his left toward an imaginary her.

The characters' presence on the stage can assume different forms (an actor's physical presence on the stage, a drawing or a shadow of the character, a voice-over, etc.). However, at this time of rehearsing, the intended use of the space of the stage in the scene was not clear, and they opened the problem up to different options. As they knew they wanted to use an overhead projector, they could suggest that Alfonsina be present as a drawing. At this time they left all the options opened (Sawyer 2003) and Michele promptly returns to play the mother.

Excerpt 3

MICHELE: Come on. Sit here close to me... How skilled she is!
PLAYWRIGHT/DIRECTOR: [Interrupting the acting] Here I imagine a little choreography . . . didin, didin, didin. [She moves her arm, mimicking the action of sewing, the loop of the stitch].

[Michele starts to perform the same gesture using the sheets in his hands as if they were the fabric being sewn].

PLAYWRIGHT/DIRECTOR: [Interrupting the acting] Ah! Here. [Mimicking a square]

FEDERICA: [Overlapping] The embroidery.

PLAYWRIGHT/DIRECTOR: The embroidered fabrics need to be shown [Referring to something previously discussed by the team].

MICHELE: [Improvising] Look how well you can embroider, like no one else!

(Minute 9:14 of video VID_20170202_183234)

After having discussed how the presence of Alfonsina onstage can be obtained, the rehearsals restart. However, the playwright/director interrupts the performance, adding to the scene that Michele was performing (he is performing alone, but the idea of having Alfonsina onstage is now shared) a gesture that was not indicated in the first draft of the script. The gesture is a reference to the biography of Alfonsina who worked as a seamstress. The word *choreography* used by the director suggests a sequence of coordinated movements. After having considered the presence of Alfonsina onstage, the proposal of the gesture become a choreography implying thus the physical presence of both the characters —Alfonsina and the mother. To introduce this concept, the director uses her own body to show a stitching gesture, together with a repeated onomatopoeic sound (*see* Figures 4a and 4b).



a.



b.

Figure 4a and Figure 4b. The playwright-director is showing the gesture of stitching she wants to be included as an action performed by the characters in the scene.

While the playwright/director is making the gesture of stitching, Michele starts the action of mimicking it adding new details. He acts to mimic the sewing and uses what he has in his hands, to support the action. The suggestion of the action of stitching with the assistance of an (imaginary) textile, together with a greater emphasis on movement (exaggeration of the movement), produces the action that will constitute the choreography, an essential part of the scene.



Figure 5. A particular of the choreography of the embroidering of the scene at the premier. Photo courtesy of Enzo Mogni.

This movement, suggested by the director and reinterpreted with more details by the actor, becomes a clear step towards the final version of the scene of the dialogue of Alfonsina and her mother (Figure 5). Nevertheless, the choreography is not the only contribution to the scene developed during the rehearsals. In the follows of the video recording of the rehearsals, other essential contributions to the scene arise.

Michele continues to read the script, standing on stage. Addressing his speech to an imagined Alfonsina, he seems to engage her in the dialogue. At a certain point, as shown by the last excerpt, the director interrupts Michele's performance to add something, mimicking a square, that is not specified in the first draft of the script. As shown from the ethnographic diary, the director's intention was a composition of a scene with drawings from an ironic comic book by Jacky Fleming (2016). The director imagines that the pictures of embroideries, taken from the comic, will be projected on a big screen onstage (not present at the moment of the rehearsal) through the overhead projector.

Excerpt 4

I had decided to stage the second part of the mother's scene through the choreographic action of the two characters sewing together. Furthermore, in this second part, I had had the idea of inserting some ironic drawings from a comic book by Jacky Fleming. The comics showed images of female embroidery with the words: "Help!" "Save me!". Through these embroideries, the women were launching subliminal messages to the readers, asking to be freed from the slavery of the house. I had previously shown the book to my colleagues, and we had agreed to project these drawings through the overhead projector (Director's auto-ethnographic diary – Day one of the rehearsals).

The idea of using Jacky Fleming's book in the play was previously introduced to the team by the playwright/director. Therefore, when she interrupts the acting mimicking a square, Federica immediately understands that it was the right moment for the images to appear in the scene. Federica's statement "The

embroidery”, which overlaps the director’s reference to the use of the images of embroidery taken from Jacky Fleming’s book (Figure 6) shows the comprehension of the director’s idea.

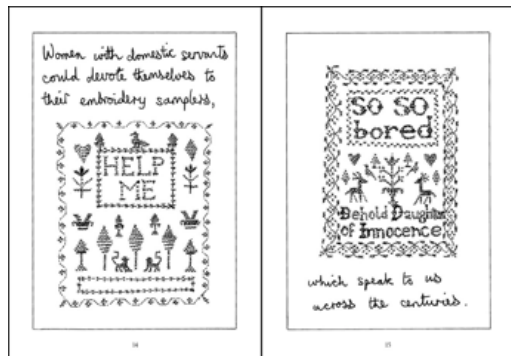


Figure 6. Pages 14 and 15 of *The Trouble with Women*, Jacky Fleming (2016), shown by the playwright/director to the team. Images reprinted with the permission of the author.

During a previous meeting, Fleming’s book was shown, thus, once activated by the references to the images on the stage, a collective understanding of the scene is triggered. The juxtaposition of the mother’s speech in the draft text—spoken by Michele, who invites Alfonsina to act according to her gender and keep herself busy with needlework—together with the images of the embroideries (which demonstrate instead the profound unease and the hidden rebellion of a young woman carrying out such activities) produces the ironic meaning of the scene. Therefore, with Carmen declaring her intention to use Fleming’s images of embroidered fabrics during the rehearsals, a collective understanding of the scene – as image/text juxtaposition- is activated.

To sustain the presence onstage of Alfonsina’s/Fleming’s embroideries Michele, who was acting before the interruption, improvises including the images in his text. His improvised lines help further in this collective perception³ of the embroideries on stage while supporting its correlation with the action of embroidering performed by the two characters on stage.

The next excerpt shows how the director’s reference to her intention to use Fleming’s images activated the participation of the group – also through new improvisations - in the creative process. Starting from this first director’s idea, the group works collectively to explore the new meaning of the scene, bringing about the emergence of unpredictable creative outcomes that develop the scene further. The following excerpt starts with Michele’s improvisation to include the referenced embroideries. Fleming’s embroideries, even not physically present in the rehearsal room, are part of a situated collective construction of the meaning of the scene. In the

³ As we will see better in the next paragraph the perception of Fleming’s images of embroideries in the scene is not an actual physiological process of vision (the Fleming’s book was not present there, nor it was overhead projected) but an *imaginative projection* that is part of the professional vision of the group.

following excerpt, we see how this new meaning elicits new creative interventions, which will produce new lines of text.

Excerpt 5

MICHELE: [*Improvising*] Look how fine you can embroider; nobody can!

FEDERICA: [*Interrupting the acting and performing as the mother improvising*] It is a pity that I am not able to read it!

PLAYWRIGHT/DIRECTOR: [*Clapping*] Exactly, nice, nice! [*Collective laughter*]

MICHELE: [*Overlapping Carmen's exclamation*] Look at how precisely you can do it; look at its perfection. Look at it. This is when I regret that I cannot read. I do not understand what you write. What did you write, my dear? [*Collective laughter*] Cheers to Holy Mary! [*Collective laughter*]

FEDERICA: [*Acting again as the mother*] It's a pity I cannot understand.

MICHELE: [*Improvising as the mother*] It's a pity I cannot understand. However, I'm a woman from the 19th century. What can you expect from me? [*Collective laughter*].

(Min 9:24 of video VID_20170202_183234)

As shown in this fragment, even if she is not assigned to perform the character, Federica temporally assumes the mother character's identity to improvise new text. Federica introduces new improvised lines able to emphasize the contrast between the mother's speech and the embroidery images. Federica's improvisation affirms the illiteracy of the mother, who is not able to read what Alfonsina writes in her embroideries.

This improvised intervention produces an unexpected creative emergence/outcome that is recognized as being comical by the collective, who express their appreciation. The playwright/director's clapping, the collective laughter, and Michele's replication of the same phrase proposed by Federica all appoint her proposal to the scene. What is essential here is the extent to which creative process in theatre rehearsals involves the entire workgroup, with members who participate to the practice, collaborating in the development of the scene as the object of work (Engeström, 1999). Thanks to the collective orientation towards the object of work of the rehearsals - the further development of the scenes - each participant make a clear contribution to the emergence of the scene.⁴

Therefore, if we want to take account of the emergence of creative ideas in group-based situated work practices, we have to follow this network of interactions involved in the creative processes. All these interactions enable participants to imagine the result of the projection of the Fleming's embroideries onstage, eliciting their ability to anticipate the possible effect of it. It is on this shared imaginative basis that Federica temporarily assumes the identity of Alfonsina's mother and improvises new text, emphasizing the contrast between the mother's speech and the embroidery images. Through the interaction of various contributions and distributed process of awareness of the situation, the group reached a stable articulation of the scene, including new lines in the dramaturgical text.

⁴ The fact that Laura, the actress hired to perform Alfonsina, is less proactive regarding the scene during the rehearsals is not a surprise. She is not used to work with the group and can be viewed as the newcomer in a community of practice.

The new configuration of the scene, with its ironic meaning, does not suddenly come out of the ether but is a result of the creative interactions network able to explore the emerging meaning of the scene further.

5.2 The collective creative imagination

The final scene as it was premiered is a dialogue, albeit Alfonsina never reply verbally to her mother, that take place involving Alfonsina's embroideries (that speak in her behalf). Even if it was the director's idea to use Fleming's images in the play, how the scene is composed using the images is the result of group's contribution during the rehearsals as a situated activity.

As we anticipated, the new ironic meaning of the scene stems from the relationship between the mother's speech and Fleming's images without their actual projection on stage. At the time of the rehearsals, the projection of the embroideries onstage is only imagined. However, this imaginative projection of the Fleming's embroidery on the stage does not happen within the director's brain only, but it is distributed in the situated practice of rehearsals. Carmen, Michele, and Federica contribute to the composition of the scene, not only with ideas and improvisation but collaborating in the construction of a shared cognition of the scene. As pointed out by Hutchins (1995), "moving the boundaries of the unit of cognitive analysis out beyond the skin reveals other sources of cognitive accomplishment. These other sources are not mysterious; they simply arise from explicable effects that are not entirely internal to the individual" (p. 355).

The ability to read and forecast emergent meanings of a scene in the encounter of textual-verbal and iconic texts is a specific theatrical professional knowledge⁵ shared by the members of the group. As theatre practitioners, they are used to dealing with meanings that stem from different fonts (actors' bodies, material artefacts, verbal text, visual images, and videos) and their interactions (including the interactions with the audience). Being used to working with multiple theatrical techniques, they are also able to imagine and anticipate the effect of images projected on the white screen even without the actual projection onstage. Their familiarity with theatrical techniques that compose a scene—mixing images and bodies on stage—allows them to easily grasp the irony that the juxtaposed dialogue and the projection of the embroideries would conjure. The proscenium of the stage, even in its vacuum, become – for the experts but not for whom is not familiar with theatre - inhabited by the projection of Fleming's images that make Alfonsina's internal world accessible.

⁵ The literature known under the umbrella *practice-based studies* in organization (Nicolini 2012), and in particular the stream interested in learning and knowing (Gherardi 2000; 2019), highlights how knowledge is socially sustained by a community (Lave & Wenger 1991), is distributed in the environment (Lave 1988), involves perceptions (Goodwin 1996), aesthetic appreciations (Cook and Yanow 1993; Strati 1999), and can be seen and analysed as situated activity (Gherardi 2000; 2019).

We can call the group's ability to anticipate and see the result of a scene a *collective creative imagination* based on a shared representation of information that emerges – at least partially - from the situated *network of interactions*. As we noticed the idea of a scene that includes Alfonsina's character onstage, the choreography, Fleming's images, the use of the overhead projection all participate in the emergence of the scene.

Once the collective imagination of Fleming's images projected on the screen is activated, Michele works in the direction of including these images in the dialogue he is performing. With his improvisation, Michele anchors Fleming's images to the dialogue and the action of sewing performed onstage. Doing so, he also refers to Fleming's images to the needling work he is performing alone, but with the idea of Alfonsina onstage. Fleming's images, thus, become Alfonsina's embroideries that give voice to the rebellion to an otherwise compliant Alfonsina. While anchoring the images of embroidery to Alfonsina's action of stitching, Michele's improvisation also focuses the mother's attention on the needling technique, praising the daughter for her technical expertise. Coherent with the features of the mother's character he is playing, Michele stressed appreciation of the stitching work done by Alfonsina, which is considered an asset for becoming ready to be a married young woman.

This focalization on the needling technique, while ignoring the message of the writing in Fleming's images, triggers the new creative idea. Imagining Fleming's images projected on the white screen while hearing the mother's positive comment related to Alfonsina's stitching makes Federica aware of the blindness of the mother about the message included in Fleming's images. Federica perceives the absence of the mother's comprehension of Alfonsina's rebellion embedded in her embroideries. The intervention of Federica helps to stress and make explicit the mother's misconception of Alfonsina's work. By affirming the mother's illiteracy and thus highlighting her incapacity to read what is written in Alfonsina's embroideries, the ironic meaning of the scene is amplified.

Acting as though she is the mother, Federica highlights and explores the distance from the mother's and the audience's perceptions. While the mother, in Michele's improvisation, concentrates the attention on the quality of the embroidering performed by the daughter, the audience sees Alfonsina's request for help. The same embroideries are read differently by the mother and the audience. With her intervention, thus, Federica explores this difference further, highlighting the shortsightedness of the mother. In so doing, she also emphasizes Alfonsina's capacity to act disciplined while being subversive, helping the audience to empathize with her.

The new meaning of the scene stems from Fleming's drawings, the linguistic reference that activates the memory of the images during the rehearsals as well as the professional habits and expertise of the group related to theatrical working practices and the anchoring of the images to the text and the actions of the scene. Altogether these elements constitute what we defined a distributed *collective imaginative projection*, which is able to use

information coming from different representational media (Hutchins & Klausen, 1995), creating a new meaning of the scene. It is this collective imaginative cognitive process that is able to trigger the new comic idea.

6. Conclusion

This article has given an account of the distributed nature of creativity by following the definition of a scene in the rehearsal of a new drama showing the group's contribution to the emergence of new meanings and ideas. A detailed analysis of contributions to the creative process has been provided to account for the distributed cognition and social interactions, situated in time and space, in naturally occurring creative processes. Mobilizing insights from a conceptualization of distributed creativity in recent cultural psychology creative studies (Glaveanu, 2014; Glaveanu et al., 2019; Sawyer 2003; 2012; 2014; Sawyer & De Zutter, 2009), influenced by the third-wave theories of distributed cognition (Hutchins, 1995), we provided empirical evidence of the situated, distributed nature of group's creative practices.

We show how new ideas for a new piece of theatre work does not reside in the mind of one individual; rather it is distributed between professionals in the rehearsal room. Observing professional practices through the lens of distributed creativity, we pointed out how *creative emergence* (Sawyer and De Zutter 2009) can be described accounting for two types of processes that we called *creative interactions network* and *collective creative imagination*. These are two sides of the same process of distributed creativity in group-based professional practices that we have distinguished for analytical purposes.

Describing the *creative interactions network* we have been able to trace the contributions mobilized or made by members during the rehearsals as a situated creative practice. The playwright's text (the first script), the director's ideas (the choreography of the sewing, the use of Fleming's images), Michele proposals (the request of Alfonsina's character onstage; the improvisation to include Alfonsina's embroideries), and Federica's pitch by improvisation (the mother's being not able to read Alfonsina's embroideries) are not reducible to individual disconnected contributions. They are instead indispensable bricks on which the scene, as performed during the *premiere* at Verdi Theatre, has been built. Each member of the group was able to work taking others' suggestions and developing them. The scene is therefore developed in a collective cognition process across the interactions network, in which every interaction adds and contributes to the development of the new meaning.

As anticipated, in the article, we stressed that there is a second aspect we need to account for: *collective creative imagination*. With collective imagination, we refer to the capacity of the group's participants to imagine how the images participate in the scene without an actual projection in the rehearsals. The members are able to activate a

perception of Fleming's images onstage using information and input from different contributions (the reference of the embroidery; the memory of Fleming's book; the familiarity with the overhead projection, etc.). It is this – more than individual - creative imagination of Fleming's images on stage that allows the group to play and experiment with the emerging meaning of the scene also improvising new text (Michele's improvisation about the embroideries and Federica's improvisation about the illiteracy of the mother). The ability of collectively imagining and anticipating the result of a scene is the cornerstone of the creation process because it allows the members to tune in to the same idea and thus to contribute to exploring new outputs. The group is able to work collectively anticipating and experimenting with the effect of creative choices.

During the rehearsal, within a ten-minute video recording, the scene is transformed from a monologue by the mother, as inscribed in the provisional script, to a scene comprising different elements and characters onstage. Following Sawyer and De Zutter's proposal, we can conclude that, as activities characterized by *collaborative emergence* are relatively unpredictable and include improvisation, the concept highlights elements that are present in all professional settings where groups participate to the development of creative outputs (such as creative studios; research groups; consultancy firms; and any other creative group-based situation). However, the improvisations we identified as constitutive for the emergence of new outputs are not always based on retrospective interpretation, a characteristic acknowledged by Sawyer and De Zutter as constitutive of *collaborative emergence*. In our view, retrospective interpretation is better applicable to unconstrained settings where *collaborative emergence* has been previously observed. In theatrical improvisation (as well as on other unconstrained settings) retrospective interpretation is crucial, for example, for the definition of the story of the play. However, in script-based theatre, as in most group-based creative professional practices, the retrospective interpretation seems less relevant, precisely because of the nature of the setting that is more constrained. In all these settings the new outcome is the result of *collaborative emergence* that is not entirely open as in the jam sessions or theatre improvisation but is based on *collective imagination* that is situated and rooted in a moment-to-moment contingency. In this sense, the rehearsal room is a 'creative laboratory' (Parolin & Pellegrinelli, 2019), where the group works collectively at the emergence of the new piece of art.

Focusing on the situated activities of groups within their 'creative laboratory' is possible to account for the collective processes of creation both in theatre, as well as in any other group-based creative professional practices. Indeed, whilst these points relate to the specificity of professional theatrical practices, we contend that such considerations represent a starting point to account for the situated collective dimension of distributed creativity within professional worlds.

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