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Unpacking distributed creativity: Analysing sociomaterial practices in theatre artwork

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Abstract

This article shows how to account for the sociomaterial dimension of distributed creativity in the arts. By following the genesis of a new theatre production, we examined the sociomaterial practices involved to unpack the sociomaterial dimension of distributed creativity. To account for this, we draw on concepts from laboratory studies to explain creative and design work. In so doing, we considered the significance of distributed creative practices that are constituted by intermediaries which we argue, help to outline, refine and develop the creative idea. This article is especially attentive to the professional practices in the rehearsal room; what we called the ‘*creative laboratory*’, the locus where material artifact and their potentialities unfold in the process of creating a work of art ‘yet to arrive’. Extracts from ethnographic observations are used to illustrate the creative process from the germination of ideas to the collectively arrived at final production. In this respect, the rehearsal room is where initiatives are trialled and tested, and specific aspects of a scene (re)created, to feed into the composition of the emergent theatrical work.

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Keywords

Distributed creativity, sociomateriality, theatre, rehearsal room, laboratory studies, 'creative laboratory'

Introduction

In the last few decades, the traditional concept of creativity has been challenged by scholars claiming that the concrete domains of the real world give a better understanding of situated creative processes (Glăveanu, 2010a, 2010b, 2014; Glăveanu et al., 2019; Montuori & Purser, 2000; Sawyer, 1995, 2003; Tanggaard, 2013). Instead of reducing creativity to personal traits or characteristics, this stream of research is interested in the processual dimensions of creativity, focusing attention on the situated practices of relationships between actors involved in a creative action. This article contributes to this strand of research by empirically exploring the professional practices that underpin the emergence of a new play, considering the situated and distributed dimension of creativity, and more critically, by showing an example of distributed creativity while simultaneously accounting for the sociomaterial bases of creative practices. First, we explore recent theoretical approaches to creative action, emphasising the need to conceptualise both the material and collective foundations of distributed creativity. Second, we introduce the empirical research with a brief outline of the research methods employed. Third, a detailed illustration and critical discussion of the empirical case as an example of distributed creativity is outlined. The conclusion considers how far a situated empirical account of distributed creativity can account for the sociomaterial bases of creative practices.

From creativity to distributed creativity

The academic interest in the nature of creativity emerged in the 1950s from the cognitive sciences, and psychometric studies, as a distinct field of research that characterised both the features and the epistemological definition of the phenomenon. Glăveanu (2010a) gives a useful typology of the different paradigms. The first, what he calls the 'He-paradigm', indicates that creativity is the genius of gifted individuals. The second, what he denotes as the 'I-paradigm', is characterised by a similar focus on the individual but attributes an equal distribution of creativity in the population. The third, the 'We-paradigm', conceives of creativity as embedded in, and influenced by, the prevailing social context and vice versa. This new perspective, born from within social psychology, focused on and investigated the sociocultural foundation and dynamics of creative acts.

[T]he We-paradigm ambitiously aims to 'put the social back' into the theory of creativity, and starts from the assumption that 'creativity takes place within, is

constituted and influenced by, and has consequences for, a social context'. Rejecting atomistic and positivistic standpoints, and adopting *more holistic and systemic ways* of looking at creativity, the psychologists promoting the We-paradigm acknowledged the social nature of creativity, a process that spurs out of transactions between self and others, self and environment. (Glăveanu, 2010a, p. 5, *emphasis in the original*).

Within this perspective, the concept of distributed creativity that emerges is a phenomenon situated 'in between people and objects, a view of creativity not as a *thing*, but an action in and on the world' (Glăveanu, 2014, p. 9, *emphasis in the original*). According to this, distributed creativity is a complex process of coordination between human and non-human actors that takes place in an ecological environment (Hutchins, 1995). Hutchins's influential contribution to the 'third wave' theories of distributed cognition (1995) underlines how tasks, and we would add creative actions, are not performed in isolation, but are always situated and connected with the social and material environment. Cognition then, extends beyond the brain (Vallée-Tourangeau & Cowley, 2013) and can be studied empirically by following the social distribution of cognitive labour.

Initially, research into the social/sociocultural psychology of creativity emphasized primarily the collaborative nature of creative acts and it is only more recently that materiality re-entered creativity theory (Tanggaard, 2013), aided by a greater shift towards models of situated cognition. [...] In essence, the emerging cultural psychology of creativity moves us from a study of the creative process, located 'inside the head', to conceptualizing *creative action*, extending the psychological into the social and material world. (Glăveanu, 2014, p. 81; *emphasis in the original*).

This attention to everyday sociomaterial practices is emphasised by Lene Tanggaard (2013), who also points out the need for naturalistic research of the creative practices.

Creativity thus occurs when we develop our practices – not via isolated thought processes but as part of life itself. [...] In line with the above definition, it is thus vital to not just define creativity as the acquiring of new ideas through isolated forms of divergent thinking among individuals, but also as the collective realization of these ideas in meaningful ways within social practices. (Tanggaard, 2013, p. 22)

Concomitantly, the sociocultural psychology of creativity as an emergent field of studies, strongly emphasises that creative work is collectively distributed and anchored in the materiality of the world. However, as pointed out 'how exactly this materiality comes to play a crucial role in the creative process itself remains largely unquestioned' (Glăveanu, 2014, p. 49).

Coming from a sociocultural perspective, Farías and Wilkie (2016) advocate a similar idea by focusing on the distributed dimension of processes that allow for new cultural artifacts to emerge. The notion of distributed creation, they argue

'emphasizes creativity as socio-material and collective process, in which no single actor holds all the cards' (Farías & Wilkie, 2016, p. 5). They suggest paying...

... attention to the variegated events in which the potentialities of materials, artefacts, bodies, images and concepts unfold empirically, taking into consideration the proprieties and constraints of phenomena and entities that enter into the studio. (Farías & Wilkie, 2016, p. 7)

Interested to describe the situated practices wherein new cultural forms are made, these authors considered the tradition of laboratory studies (Knorr-Cetina, 1995; Latour & Woolgar, 1979)¹ to understand the nature of empirical study of sites where knowledge, material entities and practices come together to produce new phenomena and new knowledge. As Farías and Wilkie (2016) suggest, we can learn about the emergence of cultural products in the same way that laboratory studies understand the production of science: by studying its ecology at the site of production (studios). Their proposal is thus to investigate the actual sites in which practitioners engage in conceiving, modelling, testing and developing cultural artifacts.

To unpack the collective and material dimension of distributed creativity, we focus our attention on sites and practices related to the emergence of a new cultural artifact (a new play). With an empirical investigation, we addressed and studied the sociomaterial practices where the creative process takes place to give a more nuanced analytical framework to account for distributed creativity (Glăveanu, 2012, 2014). Using a variety of data, this article provides a step-by-step unfolding of theoretical concepts used in the analysis of creative practices during the emergence of an actual work of art.

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 Bergamo, Northern Italy, where one of the authors worked professionally as a playwright and director. In addition to her role as the playwright and director of the new play, she gathered data through an auto-ethnographical diary (Alvesson, 2003). We also developed a triangulation of data to create a richer picture of the phenomena by using different methodologies (Denzin & Lincoln, 1994). By using several data sets (ethnographic observations, ethnographical interviews, an auto-ethnographic diary, video and audio recordings of the meetings and the rehearsal sessions, emails, Microsoft Word documents including different versions of the script and the documents used to apply for production grants),² we are able to develop an in-depth analysis of the web of practices that led to the emergence of a new theatrical production.

We studied the production of a play, entitled *Ruote Rosa* (Pink Wheels), by Luna & Gnac, a professional theatre company that features two actors, Federica and Michele. Both the writing and the direction were entrusted to one of the

authors of this contribution who had already worked with Luna & Gnac, writing and directing their previous five plays. The involvement of one of the authors in the creative process provided for full and privileged access to the field, which is typically difficult to achieve in creative work. Moreover, the participation in the field with different roles being played 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.

The play tells the story of Alfonsina Morini Strada, who was the first and only woman in the 20th century to participate in the *Giro di Italia*.³ In the next section, we provide empirical examples of the sociomaterial and situated nature of creativity, and how this contributed towards the development of a new play.

Ruote Rosa as a case of distributed creativity in artwork

Following the life and the professional practices of the theatre team, we were able to identify how activities and ecologies shape the emergence of the new theatrical production. Drawing on suggestions, theorisation and insights from the diverse literatures on distributed creation (Farías & Wilkie, 2016; Glăveanu, 2014; Tanggaard, 2013), we do not consider the source of creativity to reside within individuals, but as phenomena distributed between people, artifacts and the situated context, and the sites of creative activity. In so doing, we want to stress the situated character and the social and material basis of distributed creativity. The close analysis of the process of development of a piece of theatre shows how materials, artifacts bodies, images, texts and concepts and their potentialities are evaluated and unfolded within professional practices.

To better understand how creativity is situated and distributed, we suggest taking into consideration multiple materialisations of the artwork during the process of development. Descriptions of the idea, outlines of the story, multiple drafts of the script, images, bodies and artifacts are all materialisations that participate in the emergence of the new piece of theatre. To consider the sociomaterial grounding that creative action implies is to regard these intermediaries as steps in the process of developing of an artwork.

A similar importance for provisional artifacts is developed in the design literature by scholars that consider design as 'a method for designing through signs' (Vial, 2015). As Mattozzi (2018) points out, the design does not produce objects, instead it generates intermediary or temporary phenomena like sketches, diagrams and other models which help to think, prototype and trial aspects of what Beaubois calls, the 'object yet to arrive' (2015). We argue that this conceptualisation can be applied to all creative actions, allowing for close observance of what distributed creativity implies, so as to consider how such ephemeral intermediaries (sketches, diagrams, schemas, images and texts) participate in the development of the creative idea.

Moreover, we will look closely at the rehearsal practices where the potential (Fariás & Wilkie, 2016) or better dispositions of materials, artifacts bodies, texts and concepts are explored and tested.

Before analysing the interactions in the activities in the rehearsal room, we begin with an account of the pre-rehearsal phase including the application for funding, several meetings where decisions about theatrical technicalities and cast are taken, and the first draft of the script is produced by the playwright.

Proposing a new play: The application for funding

The scarcity of funding in the arts means that economic sustainability for independent theatre groups can only be reached by attracting public and private grants. As a result, writing proposals and explicitly developing projects that seek contributions for cultural activities are a necessary aspect to the work practices and expertise of an independent theatre company. Writing a project description for an application for funding demands the ability to depict an idea in a way that anticipates the features of a not-yet-existent work of art. Thus, sketching out a design, or outlining an object/artwork that is yet to exist, must be considered an activity that is an essential aspect of its emergence.

The process of emergence for the *Ruote Rosa* play was initially related to a broader project proposed and funded by the Italian Valdese Church after a national call for artistic work. Unfortunately, the funding was not granted, and the project of the sports trilogy was set aside. However, the opportunity arose to take part in another important national competition for a theatre production: the *Next-Laboratorio delle idee* call for funding which provided renewed interest in the development of the project about Alfonsina's life. On this occasion, the playwright rewrote the description of the project within *Next's* application format, adding details to the story and explaining the purpose of the play. Together with theatrical styles and techniques, some features of the emergent drama were specified to give the selection committee the flavour of the play.

The text of the application outlined not only the preliminary plot of the drama but also, by using quotations from different bibliographical references, offered vivid images to characterise both Alfonsina's character and the atmosphere of the social and cultural environment of the tale.

One of these quotations is taken by a book about the life of Alfonsina Strada by Percivale (2016), outlines some features of the main character of the play.

Excerpt I

By riding a busted bike, with the determination of a warrior and the athletic preparation of a seamstress, Alfonsina runs. (Excerpt from the *Next* application)

The quotation by Percivale (2016) is used in the application to create a vivid impression of Alfonsina's character as strong (and determined) as a warrior and

as precise (and capable) as a seamstress. In a text that outlines something not yet existing, the quotation works qualifying the creative idea by using powerful metaphors that conjure Alfonsina's character.

The use of references to outline characteristics of an advertising campaign is shown by Tomas Ariztía (2016)⁴ in his ethnography of creative work within an advertising agency. The author underlines how references, in his case images, videos, advertisements, web pages or other entities, are used to bring the world into the advertising studio. References are used to qualify and evaluate the creative idea during the process of becoming a new advertising campaign.

[C]reative work involves a rather open and distributed process of production mediated by creative 'references'. In fact, finding, collecting, mobilizing and evaluating references is at the core of advertising work. References are also key devices in the process within which creative ideas are qualified and evaluated at different stages of creating an advertising campaign. (Ariztía, 2016, p. 40)

Drawing a comparison of the work of *referencing* in advertising studios with the role of *referencing* in scientific work—as proposed by Science and Technology Studies (STS) (Latour, 1999)—Ariztía describes advertising references as a particular type of inscription device used to make visible, and mobilise, the qualities of creative ideas. The specific process of referencing in advertising is used to 'feed' different aspects of the brief. Referencing is a way to map out visual attributes of the campaign, like images and pictures that denote an atmosphere that helps define the creative idea. The references are thus intermediaries that qualify features of the object/campaign in its very process of development.

Analysing the application documents for the *Next* grant, it is possible to discern a similarity to the references at work in the advertising studio. The text of the application outlines the initial idea and qualifies some of its aspects. Through concepts and quotations, the application mobilises specific qualities of the embryonic creative idea, whilst the quotations taken from documentary sources about Alfonsina Strada, not only 'feed' the features of the main character of the drama, but also the very meaning of the emergent theatrical work. An excerpt from the auto-ethnographic diary illustrates this.

Excerpt 2

'By riding a busted bike, with the determination of a warrior and the athletic preparation of a seamstress, Alfonsina runs'. The image conjured by the text depicts the character of the protagonist. It also embodies what the application has so far only shown with abstract theoretical disquisitions. These considerations indicate the need to critically reflect upon the gender stereotypes. This image helps me to know Alfonsina and to think her as a masculine woman who both faced and challenge the limitations of the gender stereotypes. [...] It emerges an interpretation of Alfonsina's story as a little epic where the main character is able to overturn the

traditional gender roles. The bike and the sport, as well as the historical character of Alfonsina Morini Strada, are not the focus of the play anymore, but they are a mean to reflect on other issues (gender stereotypes). (Excerpt from playwright's auto-ethnographic diary)

The quotations, as well as the 'theoretical disquisitions', specify what is going to emerge. Percivale's (2016) quotation is one of the sources to infer that Alfonsina is an example of a masculine woman who challenged the gender stereotypes of her time. This idea of Alfonsina encourages the playwright to imagine (and then to anticipate in the application) a theatrical work that focuses on the limitations of gender stereotypes. Telling the story of Alfonsina is an opportunity to not only celebrate her defiance, but also to provide positive examples of women whose appearance, behaviours or both challenge gender stereotypes.

Being able to provide effective depictions of future dramas is an essential skill for small independent theatre companies, especially if they depend upon secure sources of funding; but it is more than a technical hoop to jump through. As the playwright's ethnographic diary shows, the outlines of the creative ideas that contributed to the application were part of the creative processes in generating the underlying messages of the new play.

The disposition of a new play: Techniques, cast and the first draft of the script

Once the grant was obtained, the creative group set preliminary meetings and a schedule for the production rehearsals. In those meetings, the team agreed to use the bright blackboard, with extemporary drawings and shadows, together with the actors' performances to tell the story of Alfonsina. The bright blackboard, coupled with the projection screen, is a theatre technique that allows for multiple ways to present characters onstage—not only embodying the actors', but also images (extemporary drawing, illustration or photos) and shadows. However, whilst allowing for numerous possibilities, the blackboard's and projection screen's materiality onstage prescribes the way space can be used by the actors' bodies.⁵ Those 'virtualities', prescription and allowances, are the ways the material device influences action (Akrich & Latour, 1992). As we will show in the following section, the materiality of the device as well as the setting of the stage—inhabited by a projection screen and bright blackboard—allows for certain creative actions but rules out others.

Once the bases of the theatrical techniques were defined, the playwright worked alone to write the first version of the script. Using different historical sources, as well as other references, the playwright composed the script. The draft, written without indicating the physical movements of the actors, nor the score, that is characteristic of a final script, outlined the structure of the play and proposes specific scenes (written in the form of monologues or dialogues). The draft text is not fixed, it is temporary; a provisional entity that must be unfolded, tested and

redefined in the rehearsal room, where the new drama will come into being. We borrow the ‘provisional entity’ concept from those studies that take inspiration from laboratory studies trying to open the black box of design (Mattozzi, 2018; Parolin, 2010; Houdart & Minato, 2009; Storni, 2012; Vinck, 2003; Yaneva, 2005, 2009). These studies conceive of design as a series of negotiations among different actors, regulations, materials and social constraints. As previously mentioned, Mattozzi (2018),⁶ who conceptualised design as a concatenation of translations, conceive of design as the production of intermediaries like sketches, diagrams, models and prototypes, that through operations of scaling, functional tests and simulations, test and trial the emerging object (Beaubois, 2015; Mattozzi, 2018; Yaneva, 2009; Vial, 2015). In so doing, these scholars focus their attention on activities that take place in the design studio (Farías & Wilkie, 2016). Likewise, we consider the rehearsal room as a ‘creative laboratory’, the locus where those trials, and other operations that unfold into the final drama, take place.

During days of rehearsal, the playwright rewrites the script to include what emerges from these trials and tests. The new piece of theatre becomes stabilised, thanks to the activity in the rehearsal room that day by day become inscribed in further version of the script.

As we will see in the following of the section, the new piece of theatre comes into being through collective readings, exploration of the different opportunities and constraints provided by human and non-human actors (actors’ bodies, materials, spaces and texts), redefinition and improvisations, inscription and re-inscription.

Unfolding creativity in sociomaterial practices: Activities in the rehearsals room

To account for the development of a new cultural artifact (Farías & Wilkie, 2016), we investigated the sociomaterial and distributed creativity (Glăveanu, 2014; Tanggaard, 2013) that took place in the rehearsal room. In this way, we could account for the emergence of the play as an ‘object yet to arrive’ (Beaubois, 2015) from the vantage point of the rehearsal room, imagined as a studio—the site where the forthcoming drama was developed. To better understand the situated and distributed nature of creativity, we video-recorded the activities in the rehearsal room. The videos recorded on the very first day of rehearsals allowed us to analyse the interactions,⁷ thus accounting for the unfolding of distributed creativity within sociomaterial practices.

When rehearsals began, the playwright’s provisional draft 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 a scene, including the characters’ movements, becomes defined and crystalised, and only then, it is inscribed in the script. The example below, which describes the trajectory of how the skeletal framework of the provisional script becomes a final scene, illustrates this process.

The first activity involved the group collectively reading the script aloud while sitting in a circle. However, it is only when actors began to occupy the stage space that other issues related to the composition of the scene came into consideration. In the next vignette, we see Michele, who is playing Alfonsina's mother, struggling with uncertainty while reading the text onstage.

Excerpt 3

Michele: *[Acting as the mother, reading the script]* You are rowdy! [...]
[Interrupting the acting] And then she arrives... because I am telling her... *[He turns from the front orientation facing the public to his left, indicating a fictional engagement with another character (see Figure 1)].*

The playwright/director Carmen: *[Interrupting the acting]* She could also be a drawing...

Michele: *[Acting as the mother, reading the script]* Look at your shabby dress! [...]

Carmen: *[Interrupting the acting]* I need to understand if Laura [Alfonsina's interpreter] is on stage with you...

Michele: *[Reflecting aloud]* Maybe, she could be a drawing before, and then it could be her [in person] ...

Carmen: Yes...

Video day one, minutes 7.50



Figure 1. Michele stands and performs as the mother, while the playwright/director (on the right in the picture) is observing the scene from the point of view of the audience. Federica and Laura are still sitting in a circle where the whole group was positioned during the very first reading of the script. Performing the mother's speech addressed to Alfonsina, Michele is turning to his left, towards an imaginary Alfonsina (image from Video, day one, minutes 7.50).

As the excerpt shows, it is only whilst reading the script, standing in the stage space, that Michele raises the necessity to refine what has not yet been articulated by the draft, namely the presence of Alfonsina's character on stage. This example shows how the function of activities in the rehearsals room, the interaction between the text of the script with bodies, spaces and material artifacts, allows for the composition of the scene to be discussed and contested while it is being made.

Reading the text of the script in a circle does not require any consideration of the characters' physical positions, whilst reading the same text onstage compels the team to consider it. When Michele turned, he was beginning to unfold the relationship between the character he is playing (the mother) and Alfonsina, inscribed in the draft of the script. The lines are written in the form of direct discourse, as the mother addressing Alfonsina. When he moves to the stage, Michele is unable to continue reading without knowing the position of Alfonsina, to whom the mother's discourse is addressed. Triggered by these considerations, the scene becomes enriched by Alfonsina's presence on the stage. As the excerpt shows, when stimulated by Michele's consideration, the playwright/director speculates on the kind of presence Alfonsina should have on stage. Once the presence of Alfonsina is requested in the scene, a way to portray her presence must be found. As already noted, thanks to the relationship between light blackboard, projection screen and actors' bodies several kinds of the presence of the characters on stage are possible (actors' bodies physically onstage, voiceover, drawings projected on the projection screen and shadows). In the following days of rehearsal, various options relating to the presence of the characters were explored, before arriving at the completed scene, comprised of the characters as shadows on the projection screen (see Figure 2).

As the excerpt showed, the encounter between the text, the bodies and the space (Michele reading onstage) engendered contemplation about the location of the characters in the scene. These considerations were developed further during the rehearsals because of the allowances and prescriptions available by virtue of the specific techniques that could be used (the projection). Thus, material artifacts such as the bright blackboard and the projection screen play a critical role and contribute in heterogeneous ways to the creative practice. On the one hand, the relationship between artifacts (light blackboard, projector screen and stage), actors' bodies and spaces allows for the composition of the scene played by shadows, whilst on the other, exploring the opportunities provided by the two shadows, meant that new ways to communicate contents or meanings could be triggered. Shadows, for example, are much better equipped than actors' bodies to portray the young age of Alfonsina in contrast to her mother (see Figure 2).

A further empirical example of the contribution of materiality to the creative process is evident in the second video recording of the first day of rehearsals. The video shows the rehearsal of a scene where Alfonsina, and her mother, are chatting while they are embroidering, and emphasises the contribution of images taken from a comic book in designing the meaning of the scene.



Figure 2. The image appearing on the projection screen of the discussed scene done by shadows (photo courtesy of Enzo Mologni).

Excerpt 4

Carmen: [*Interrupting the acting of the dialogue between Alfonsina and her mother*] Ah!

Here... [*mimicking a square*]

Federica: [*overlapping Carmen*] the embroidery...

Carmen: The embroidered fabrics have to be shown [*referring to something already discussed by the team*].

Video day one, minutes 9.28

In the vignette, the director interrupts the acting to focus collective attention towards images of embroidery taken from © Jacky Fleming's book 'The Trouble with Women' (Fleming, 2016) (Figure 3), which had previously shown to the team.

The images from Fleming's book were used as references (Ariztía, 2016) to 'feed' the very meaning of the scene. They express the ironic unease of a woman who has to undergo the typical constraints of the female gender in a 19th-century patriarchal society. The juxtaposition of the mother's speech—spoken by Michele, who invites Alfonsina to act according to her gender and keep herself busy with needlework—together with the ironic images of the embroideries (from which the profound unease and the hidden rebellion of young woman carrying out such activities) redraws the very meaning of the scene (see Figure 4).

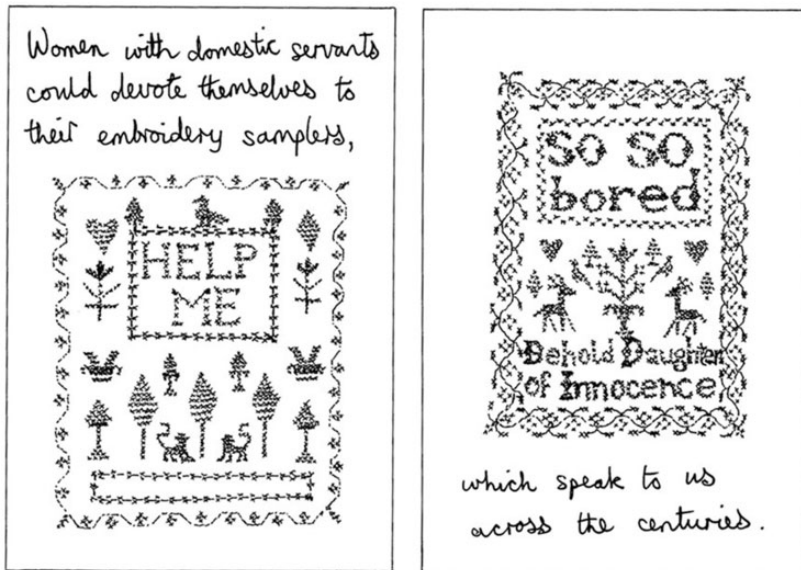


Figure 3. Images of the pages 14 and 15 of the © Jacky Fleming's book 'The Trouble with Women' (Fleming, 2016), shown by the playwright/director to the team. Source: reproduced with permission courtesy of Jacky Fleming.



Figure 4. The ad hoc produced 'Fleming-inspired' images of embroideries with the Italian word *Aiuto* (meaning *help*), used in the discussed scene of the play (Photo courtesy of Enzo Mogni).

With her words, the director activated Fleming's book reference (Ariztía, 2016), qualifies and renders visible specific aspects (in this case, the discomfort of being subjugated at home), so they can participate in the creative process. It was the synthesis of text juxtaposed with the images that elicited the meaning of the scene.

It has to be emphasised here that the new meaning of the scene stems specifically from the relationship between the mother's speech and Fleming's images without any projection on stage. As a matter of fact, at the time of the video-recording, the projection of the embroideries onstage is only imagined (but in a collective way), thanks to the referencing work of words and the previously shown images. The ability to anticipate textual and iconic relationships reflects the professional vision⁸ of the director and the actors. Their familiarity with theatrical techniques allows them to easily grasp the irony that the juxtaposed projection of the text and the embroideries would conjure. The proscenium of the rehearsal room is viewed by the experts as one inhabited by the projection of Fleming's images that make Alfonsina's internal world accessible.

It was notable that the new meaning of the scene was not only clear for the director, but also to the other members, who clearly shared the professional vision of being able to manipulate textual/iconic relationships. Federica's anticipation about the embroideries suggests that she was aware that Fleming's images will participate in the scene, Michele similarly steps into the collective sensemaking by adding new lines that include the embroideries in the text, as the following of the interactions shows (see excerpt 5).

The following excerpt illustrates how referencing and the members' shared professional vision, allowed for the shared understanding of the scene to be tested and explored further.

Excerpt 5

Carmen: *The embroidered fabrics have to be shown [referring to something already discussed by the team].*

Michele: *[improvising by acting as the mother]* Look how fine you can embroider, nobody can!

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

Carmen: *[Clapping]* Exactly, nice, nice! *[Collective laughter].*

Michele: *[Overlapping Carmen's exclamation and improvising as the mother]* 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 can't understand... However, I'm a woman from the 19th century, what can you expect from me? *[Collective laughter].*

Video day one, minutes 9.34

In the excerpt, Michele improvises the first line of text, to include the referenced embroideries, 'Look how fine you can embroider, nobody can!'. The embroideries (even while not physically present onstage) are thus part of a collectively situated perception (Hutchins, 1995) of the meaning of the emergent scene. Using the reference of the images as they would appear through the projection screen, the group were able to attribute a new meaning to the scene. Federica, stepping into the scene,⁹ introduces new lines able to emphasise the contrast between the mother's speech and the embroidery images. Whilst Federica's improvisation declares the illiteracy of the mother, who is not able to read what Alfonsina writes in her embroideries, it is identified as being comical by the community who express their collective appreciation. The playwright/director's clapping, the collective laughter and Michele's replication of the same phrase appoint the proposal to the scene.¹⁰

What is revealed here is the extent to which creative practices in theatre rehearsals involve the entire workgroup, with members of the practice collaborating in the development of the scene as the object of work (Engeström, 1999). Thanks to an orientation towards the object of work and an awareness of the situation (Hutchins, 1995), each participant makes a clear contribution to the collective creation.

Central to our argument is the idea that creativity, as well as cognition, does not reside in individual heads, but is rather a part of the practice itself. Michele's performance of the character, the staging of the text, the director's interventions, the use of Fleming's images as references, the 'professional vision' and expertise, allows them to think about the image/text relationship. It is the legitimate participation in creative practice that elicits Federica's out-of-character situated improvisation. Thus, Federica's text was a creative improvisation based on situated collective meaning-making that resulted from the sociomaterial aspect of the rehearsal practice (the referencing, the Fleming's images, the techniques, etc.).

The new lines of the text which emphasise the irony of the scene, do not come out of the ether, or the insight of a genius mind, they were a consequence of the collective exploration for meaning of the scene. The meaning of the scene, rooted in the contrast between the content expressed by the mother and the image of the inner world of Alfonsina, is discursively constructed in the rehearsal room, thanks to the reference to Fleming's images. Through what we call an 'imaginative projection', the irony of the scene became shared, and the team plays with text improvisations to better explore it. It is in this context of collective exploration that the new ironic meaning of Federica's new lines of text came from.

Conclusion

This article has given an account of the distributed nature of creativity by following the emergence of a new drama. A detailed analysis of contributions to the creative process has been provided to account for the role of materiality and social relations, situated in time and space, in naturally occurring creative processes

(Tanggaard, 2013). Mobilising insights coming from STS, laboratory studies (Knorr-Cetina, 1983; Latour, 1987, 1999; Latour & Woolgar, 1979), alongside a conceptualisation of distributed creativity in recent cultural psychology creative studies (Glăveanu, 2014; Glăveanu et al., 2019; Tanggaard, 2013) influenced by the ‘third wave’ theories of distributed cognition (Hutchins, 1995), we provided empirical evidence of the situated, distributed nature of creative practices. We show how the creative impetus for a new piece of theatre does not reside in the mind of one individual, rather it is distributed in the sociomateriality of creative practices within and without the rehearsal room.

Observing professional practices through the lens of laboratory studies, we were able to see the materialisations that participate in the development of the creative idea. In the example of the application for the call for funding, we were able to demonstrate not only how the initial outline of the drama participates in the creative process, but also how quotations and concepts ‘feed’ into and contribute to the development of the ‘object yet to arrive’ (Beaubois, 2015). The quotations used in the application provided a creative idea about Alfonsina, which inspired the playwright to imagine a play about gender stereotypes. Moreover, our analysis shows how interactions between bodies, materialities and spaces gave shape to the creative idea through the different drafts of the script. The initial draft was tested through trials and improvisations in the rehearsal room in order to arrive at a progressive definition of the scene. The encounter between the script on the one hand, and bodies, space and material artifacts on the other, allowed for the composition of the scene to be tested and trialled in the process of producing/stabilise/define the scene. Thus, it was through these interactions between bodies, materials and texts that distributed creativity occurs. With the example of Federica’s new lines of text, we were able to show how creative action, traditionally interpreted as rooted in individual insight, is less extemporaneous improvisation, and more the product of a situated collective understanding; a knowing and doing within professional practice.

We have argued that distributed creativity, defined as situated actions in a web of sociomaterial practices, was essential to the development of a new cultural product: the new play. In addition, we suggest that in understanding the genesis of a new piece of theatre, concepts from laboratory studies are powerful analytical tools in explaining creative and design work (Farías & Wilkie, 2016; Mattozzi 2018; Parolin, 2010), as well as the critical role of sociomateriality in distributed creativity. We suggest that creative practices are constituted by intermediaries (descriptions of the creative idea, drafts of the script, sketches, images and quotations) that have to be taken into account in the analysis of the development of the creative idea. We advocate considering the rehearsal room, which we conceived as a ‘creative laboratory’, the locus where the potential of texts, material artifacts bodies, concepts and meanings are tested and explored in the creative process. In addition to this, a focus on how *meaning-making* is collectively and discursively constructed in the rehearsal room was central to how initiatives emerged about specific aspects of a scene. Analysing carefully the interactions taking place in the

rehearsal room, we were able to see how new lines of text emerged in a distributed creative process which was based on situated discourses, meanings, space and material artifacts. Studying distributed creativity, thus, requires empirical observation of the moment-to-moment processes whereby situated actions and interactions result in the emergence of a new piece of art.

Finally, whilst these points relate to the specificity of theatrical professional practices, we contend that such considerations represent a starting point in addressing the request formulated by cultural psychology of creativity regarding how to account for the situated sociomaterial dimension of distributed creativity.

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Notes

1. Located within Science and Technology Studies (STS), laboratory studies are a well-established stream of literature intended to demonstrate the local accomplishments of scientific knowledge.
2. A mixed methodology reflects also the use of insights from different literature as studio studies, laboratory studies, distributed creativity and distributed cognition.

3. Also known as the *Giro*, the *Giro di Italia* is a multiple stage Italian cycle race that began in 1909.
4. Ariztía (2016) is one of the authors of the empirical works included in the Fariás and Wilkie's collection titled 'Studio Studies'.
5. An important contribution to the new piece of theatre is played by the projection screen and its materiality. To avoid the bidimensional effect of acting above the projection screen, a penetrable projection screen has been specifically developed. For the sake of brevity of this article, we choose not to develop the topic further.
6. Alvise Mattozzi and Laura Lucia Parolin have started to elaborate a model for design-as-practice, intended as the concatenation of translations, comprising different phases from the designing and making of the artifacts as well as their exchange and use.
7. Interactional analysis is used to document the step-by-step emergence of distributed cognition from the contributions of each group member (Hutchins, 1995; Jordan & Henderson, 1995).
8. Goodwin (1994) has developed the concept of 'professional vision', which he defines as a socially organised way of seeing and understanding events.
9. Even if she is not assigned to perform the character, she temporally assumes the character's identity to propose new lines. She does it, and thus contributes to the development of the creative idea, since 'to define the scene' is the shared object of work of the rehearsals practice.
10. The (re)writing of the script is a playwright/director's responsibility, but it is related to the activities taking place in the rehearsal room. The social appreciation of Federica's improvisation sticks her proposal to the scene.

References

- Akrich, M., & Latour, B. (1992). A summary of convenient vocabulary for the semiotics of human and nonhuman assemblies. In W. E. Bijker & J. Law (eds), *Shaping technology/building society: Studies in sociotechnical change* (pp. 259–264). Cambridge, MA: MIT Press.
- Alvesson, M. (2003). Methodology for close up studies – Struggling with closeness and closure. *Higher Education*, 46, 167–193.
- Ariztía, T. (2016). The 'reference' as an advertising device. In I. Fariás & A. Wilkie (eds), *Studio studies: Operations, topologies & displacements*. Abingdon, UK: Routledge.
- Beaubois, V. (2015). Design, assemblage and functionality. *Deleuze and Design, Techniques & Culture*, 64, 48–63.
- Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of qualitative research*. Thousand Oaks, CA: Sage.
- Engeström, Y. (1999). Activity theory and individual and social transformation. In Y. Engeström, R. Miettinen, & R.-L. Punamäki-Gitai (eds), *Perspectives on activity theory* (pp. 19–38). Cambridge, UK: Cambridge University Press.
- Fariás, I., & Wilkie, A. (2016). *Studio studies: Operations, topologies & displacements*. Abingdon, UK: Routledge.
- Fleming, J. (2016). *The trouble with women*. London, UK: Square Peg.
- Glăveanu, V. P. (2010a). Paradigms in the study of creativity: Introducing the perspective of cultural psychology. *New Ideas in Psychology*, 28, 79–93.
- Glăveanu, V. P. (2010b). Principles for a cultural psychology of creativity. *Culture & Psychology*, 16, 147–163.

- Glăveanu, V. P. (2012). What can be done with an egg? Creativity, material objects, and the theory of affordances. *The Journal of Creative Behavior*, 46(3), 192–208.
- Glăveanu, V. P. (2014). *Distributed creativity: Thinking outside the box of the creative individual*. Berlin, Germany: Springer.
- Glăveanu, V. P., Hanchett Hanson, M., Baer, J., Barbot, B., Clapp, E. P., Corazza, G. E., ... Montuori, A. (2019). Advancing creativity theory and research: A socio-cultural manifesto. *The Journal of Creative Behavior*, 0, 1–5.
- Goodwin, C. (1994). Professional vision. *American Anthropologist*, 96, 606–633.
- Houdart, S., & Minato, C. (2009). *Kuma Kengo: An unconventional monograph*. Paris, France: Editions donner lieu.
- Hutchins, E. (1995). *Cognition in the wild*. Cambridge, MA: MIT Press.
- Jordan, B., & Henderson, A. (1995). Interaction analysis: Foundations and practice. *The journal of the learning sciences*, 4(1), 39–103.
- Knorr-Cetina, K. D. (1983). The ethnographic study of scientific work: Towards a constructivist interpretation of science. In K. D. Knorr-Cetina & M. Mulkay (eds), *Science observed: Perspectives on the social study of science*. Thousand Oaks, CA: Sage.
- Knorr Cetina, K. D. (1995). Laboratory studies: the cultural approach to the study of science. In Jasanoff, S., Markle, G. E., Peterson, J. C., & Pinch, T. *Handbook of science and technology studies*. SAGE Publications, pp. 140–166. doi: 10.4135/9781412990127
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge, MA: Harvard University Press.
- Latour, B. (1999). *Pandora's hope: Essays on the reality of science studies*. Cambridge, MA: Harvard University Press.
- Latour, B., & Woolgar, S. (1979). *Laboratory life: The social construction of scientific facts*. Beverly Hills, CA: Sage.
- Mattozzi, A. (2018). *Quando il design è una serie di descrizioni prospettive, peper presented to the conference Quando è Design/Quand c'est du Design/When is Design*, Urbino, Italy, 10–11 September 2018.
- Montuori, A., & Purser, R. (2000). In Search of Creativity: Beyond Individualism and Collectivism. *Western Academy of Management Conference*, Hawaii, March 2000.
- Parolin, L. L. (2010). Sulla produzione materiale. Qualità sensibili e sapere pratico nella stabilizzazione degli artefatti. *Tecnoscienza*, 1, 39–56.
- Percivale, T. (2016). *Più veloce del vento*. San Dorligo della Valle, Italy: Einaudi Ragazzi.
- Sawyer, R. K. (1995). Creativity as mediated action: A comparison of improvisational performance and product creativity. *Mind, Culture, and Activity*, 2, 172–191.
- Sawyer, R. K. (2003). *Group creativity: Music, theater, collaboration*. Mahwah, NJ: Erlbaum.
- Storni, C. (2012). Unpacking design practices: The notion of thing in the making of artefacts. *Science, Technology, & Human Values*, 37, 88–123.
- Tangaard, L. (2013). The sociomateriality of creativity in everyday life. *Culture & Psychology*, 19, 20–32.
- Vallée-Tourangeau F., & Cowley S. J. (2013) Human Thinking Beyond the Brain. In: Cowley S., Vallée-Tourangeau F., (eds) *Cognition Beyond the Brain*. London: Springer, pp. 1–11.
- Vial, S. (2015). *Le design*. Paris, France: Presses Universitaires de France.
- Vinck, D. (2003). *Everyday engineering. An ethnography of design and innovation*. Cambridge, MA: MIT Press.

Yaneva, A. (2005). Scaling up and down: Extraction trials in architectural design. *Social Studies of Science*, 35(6), 867–894.

Yaneva, A. (2009). *The making of a building: A pragmatist approach to architecture*. Peter Lang.

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Carmen Pellegrinelli is a professional playwright and director in theatre. She studied Arts and Performance Studies at the University of Bologna and Clinical Psychology at the University of Bergamo, where she recently discussed a dissertation on distributed creativity. As a reflexive director and playwright professional, she is interested in understanding the collective processes of creativity in theatre.