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MARINA HANGANU

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Beyond the Human:
Theatre, Robots and Social Realities

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Francesca Fatichenti was born in Trento, Italy, in 1996. In 2018, she graduated from the acting course at the theatre academy Civica Scuola di Teatro Paolo Grassi in Milan. She was directed by Fiammetta Perugi, Massimo Navone and Maurizio Schmidt and co-created a play with the Dedalus Teatro company. In 2021, Francesca performed in *The tragedy is over, Platonov* directed by Liv Ferracchiati and she gained a special mention at the Biennale of Venice for her role. She acted in numerous productions by Carlo Boso, both in Italian and French. Francesca acted in and produced short movies, read texts at different events, organised and conducted workshops and assisted theatre directors. She masters leather mask making and wood carving at a professional level.

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Marina Hanganu explores the integration of technology into the arts from a practical and theoretical perspective. She holds a PhD in Theatre and Performing Arts from UNATC *I.L. Caragiale* Bucharest for the thesis *Telematic Theatre – From Concept to Performance* (2022), an MA in Advanced Theatre Practice from the Royal Central School of Speech and Drama (London, 2015) and a BA in Theatre Directing from UNATC (2014). She is the project initiator and coordinator of *Tele-Encounters* and *Tele-Encounters: Beyond the Human*, co-funded by the Creative Europe programme of the European Union. Her directing and playwrighting credits include a variety of telematic performances: *2032 SMART-FAMILY*, *Generation 200*, *The Planet of Lost Dreams*, *Tele-City* (The *George Ciprian* Theatre), *Before Sunset/After Sunrise* (London, Bloomsbury Festival and We Are Now Festival) and *No. 30 Popa Rusu Street* (Theatre *7*, Bucharest). Author of the monograph (in RO) *Telematic Theatre* (Ed. Universitaria, Craiova, 2022) and editor of *Tele-Encounters: Telepresence and Migration* (UNATC Press, Bucharest, 2019).

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Introduction: Theatre, Robots and Social Realities

Marina Hanganu

This volume contains the research outcomes of the *Tele-Encounters: Beyond the Human* cultural project, co-funded by the Creative Europe programme of the European Union (2020-2023). The main artistic results are *2032 SMART-FAMILY*, a transnational telematic theatre performance with a robot, and *Imaginary Robots*, an interactive website with virtual characters powered by conversational Artificial Intelligence.

The project was implemented by a consortium of three partners with complementary profiles. I initiated *Tele-Encounters* on behalf of The *George Ciprian* Theatre in Buzău, Romania, a public theatre venue and producer subsidised by the Buzău County Council. We were joined by Industria Scenica, a cultural private enterprise based in Vimodrone (Milan, Italy) specialising in community engagement. Together, we coproduced the telematic performance and collected data for three of the project studies. The *George Ciprian* Theatre had already collaborated with UCAM Catholic University of Murcia on the first edition of *Tele-Encounters*[1]. As a private higher education institution in Spain, UCAM was mainly responsible for the creation of the *Imaginary Robots* platform and for conducting two academic studies.

Spanning several fields of knowledge, the project is an artistic response to the combined social challenges posed by digitisation, ageing and migration. The project set out to explore the meaningful integration of digital technologies (telematics, robots and AI) into art, thus fostering the cooperation of artists, social scientists, and technologists in order to

[1] The current project is a continuation of *Tele-Encounters*, also co-funded by Creative Europe in the period 2017-2019. Through telematic theatre, cinematic virtual reality and sociological research, *Tele-Encounters* explored the relationship between left-behind children and emigrant parents (Tele-Encounters website, 2019).

consolidate their professional skills. Secondly, it was an attempt to reach wider audiences offline and online and to strengthen our relationship with existing audiences by bringing together intergenerational groups. To achieve this, we facilitated the elderly's participation in digital cultural events alongside young people and provided free online access to most project content (e.g., through livestreaming). Our transversal objective was to investigate caregiving in transnational families from a roboethical perspective while imagining potential roles for social robots and opening debate about the ethics of their involvement in family life.

The title, *Beyond the Human*, links to the philosophical discourse of *posthumanism*, not to be confused with *transhumanism*, which devalues the human body to the point of its techno-enhancement or even replacement with technology. *Posthumanism* in its multiple variants tries to overcome pernicious dualisms, amongst which nature/culture, mind/body, male/female and human/nonhuman (Ferrando, 2018). The critical posthumanism proposed by Rosi Braidotti is particularly relevant to the ethos of this project. On the one hand, posthuman critical theory seeks to dismantle the centrality of the humanist subject, associated with the figure of the white abled Man. Subjectivity is extended towards posthuman figures, understood as marginalised others, human and nonhuman alike. On the other hand, critical posthumanism is postanthropocentric, challenging human supremacy over other species and over the nonhuman world as a whole:

> Posthuman critical theory celebrates the diversity of life – as *zoe* – as non-hierarchical matter, which recognizes the respective degrees of intelligence and creativity of all organisms. This implies that thinking is *not* the prerogative of humans alone, which allows for a form of relational and collaborative ethics. (Braidotti, 2018: 340)

Robots and migrants are posthuman subjects and also the central figures of our project. Braidotti's emphasis on relationality (also with and via technology) and the ethics of human-nonhuman assemblages is highly suited to the exploration of robot caregiving. Moreover, this project was influenced by her idea that critical and creative thinking can be a way towards imagining alternative ways of being (Braidotti, 2013: 12). On the same note, *Tele-Encounters Beyond the Human* can be considered a 'rehearsal for the

robot revolution' (Jochum and Goldberg, 2014) and a method of prospective education to address future societal changes (OECD, 2022: 3–4).

Ageing, migration and robots

The pace of demographic ageing in the EU is the second highest in the world after Japan. Consequently, the old-age dependency ratio is expected to increase dramatically by 2050, with less than two people of working age for every 65+ person (Corselli-Nordblad and Strandell, 2020: 25–27). The old-age dependency ratio is not invoked here as a cynical indicator of the potential 'economic burden' posed by the elderly. In fact, many people stay active after their official retirement age (European Commission, 2022b: 2). Rather, these numbers suggest that, with an already existing shortage of care workers across the EU, the caregiving crisis will only accentuate (European Commission, 2022a: 11–12).

At the EU level, among the elders currently living at home (not institutionalised), an average of 26.6% of those aged 65+ and 39.4% of those aged 75+ require long-term care (European Commission, 2022a: 4). In 2021, the share of elderly people who lived alone was 33.3% in Romania, 28.5% in Italy and 24% in Spain (Eurostat, 2022). Emigration can only add to the crisis of elderly care in countries with predominantly outward migration. Romanian migrants are likely to face difficulties providing informal care for their parents from a distance. The number of elders left alone in the aftermath of their adult children's migration is undocumented in Romania, a country with approximately 4 million emigrants (*World Migration Report 2022*, 2021: 202).

The *European Care Strategy* mentions the support for digital initiatives that could improve caregiving and healthcare provision (European Commission, 2022a: 10). Could technology provide a solution? The Ambient Assisted Living (AAL) paradigm suggests that:

> The implementation of technology-enabled supportive intelligent environments may offer opportunities to promote improved and more personalized care services into older age. Combined with care functionalities such as remote care support, medical reminders, behavioral monitoring and virtual coaching, they have the potential of delivering the right support to the end-users when help is needed. (Anghel et al., 2020: 2)

As a corollary to AAL, current research into social robots envisages them as future caregivers and companions for the increasing number of seniors. Social robots are generally understood as mechanisms with some level of autonomy that can interact with humans in a way interpreted as social behaviour (Henschel et al., 2021: 11). However, not all voices are enthusiastic about the adoption of robots in a sensitive field such as caregiving, with some considering robots a 'techno-fix' that may lead to deskilling of caregiving labour, lower wages, deception, surveillance, data protection concerns and loss of human contact (e.g., Parks, 2010; Wright, 2019). An ethnographic study by Wright (2019) analyses the experience of caregivers in an elderly care home in Japan throughout a trial period of approximately six weeks with three types of robots: Pepper, Paro and Hug, which is a lifting robot. Wright concludes that the use of robots actually put more strain on the human workers in the care home. For example, Pepper had to be cared for and helped with all tasks almost like the human residents. Another episode he recounts concerns one elderly lady's unhealthy emotional attachment to the toy-like Paro, as she would cry while talking to Paro and refused to eat without the robot by her side (2019: 347). In his recent book, *Robots Won't Save Japan* (2023), Wright goes further to highlight the connection between capitalism, the commodification of care, the nationalist utopia of a techno-welfare state and the media hype surrounding the use of robots in Japan (in care homes, not in individual homes). Most care robots were not even developed for care work, so they were adapted retrospectively, without being able to meet real-life necessities (2023: 19). At least for now, Wright contends, care robots call for even more human labour rather than solving the care crisis.

Aware of the fact that the development and use of social robots pose ethical questions, we have sought to familiarise ourselves and also our audiences with current developments and discussions surrounding robots and AI. All project activities were intended to provoke the audience, the artists, the technologists and the researchers involved to think about their preferable future. All the same, perhaps given the artistic nature of our project, there is a romantic vision behind the theatre performance and the virtual robots platform. Beyond the questions raised, there is the hope that one day, a robot like Ogmios Z42 or the *Imaginary Robots* will come true.

The 'futures cone'

The documentation process for both *2032 SMART-FAMILY* and *Imaginary Robots* tapped into the collective imagination about human-robot coexistence. In 2021, six brainstorming sessions were organised in Romania, Spain and Italy using a similar structure. The participants were children (mostly 12-year-olds) and adults (predominantly seniors), guided by an interdisciplinary team of artists, robotics experts and ethicists. To adapt the content to the particularities of each age, the sessions for children and adults were held separately. All workshops started with a presentation about existing robot models and current developments in the field. Children also explored the theme of human-robot interaction through theatre games. In Romania, participants of all ages were stimulated to engage in discussions concerning *roboethics* in different hypothetical cases. Coined by Gianmarco Veruggio in 2001/2002, the word *roboethics* refers to the ethics of robot design, human-robot interaction and robot deployment (Veruggio and Operto, 2008: 1504). The participants were later asked to complete a character file, thus imagining the ideal social robot that could be a caregiver or companion for the elderly. The over 90 character files resulting from the workshops were published online in the form of three brochures (Tele-Encounters: Beyond the Human, 2021). The participants' ideas, including their drawings, inspired the creation of the virtual and physical robot characters in the project.

The 'futures cone' presented in *Speculative Everything: Design, Fiction, and Social Dreaming* influenced the way the workshops were conducted (Dunne and Raby, 2013: 2–6). The famous diagram, which has seen various adaptations since first formulated by Norman Henchey, depicts four types of futures: the probable (what is *likely* to happen based on current conditions), the plausible (the larger cone of what *could* happen), the preferable (what we would *like* to happen) and the possible future (what *might* happen). Outside of the possible lies the realm of fantasy. The workshop participants were encouraged to place their ideal robot (their version of the preferable future) anywhere on the axis from reality (what already is) to fiction (what could be). Indeed, their creations belong to the whole spectrum from the probable to the improbable or, as Joseph Voros calls it, the

'preposterous' (2017). In reality, 'the futures cone' will be different for every person:

> (…) the present is not a singular point on the futures cone universally experienced by everyone, but rather a set of multiple experiences. From each of these experiences and perspectives, what seems like possible, plausible, probable, or preferable futures may differ. (Kozubaev et al., 2020: 6)

2032 SMART-FAMILY

2032 SMART-FAMILY is set in a probable future, hinging on the less likely category of the possible. The play draws on the social realities of migration and technological advancement and is based on 26 in-depth interviews with Romanian migrants (most of them in Italy) and left-behind elderly parents in Romania (Vlădoiu and Kivu, 2021). The choice of doing a performance that connects Romania and Italy was due to Romanians being the largest immigrant group in Italy (over 1 million) and Italy being the primary destination for Romanian emigrants (Ricci, 2022b: 44; *World Migration Report 2022*, 2021). Virginia's story as the migrant character in the play is rooted in the 'brain drain' phenomenon of intellectuals leaving Romania (Ricci, 2022a: 31–32). However, the play is not so much oriented towards Virginia's reasons for emigration. The focal point is the condition of living far away from one's elderly parent in need of assistance, which is certainly not restricted to an international migration context. The theme of migration and distant family relationships was very appropriate for the use of telematics.

Looking at the history of telematic art since the 1960s[2] and also at the present-day landscape, very few telematic performances connecting on-site audiences and actors in distant spaces are produced worldwide. One important reason is likely to be the considerable efforts entailed by such

[2] The history of telematic art is rich, with examples dating back at least to the end of the 1960s. I have covered key points in the history of telematic theatre in a different book based on my doctoral research (Hanganu, 2022). Detailed accounts of the history of telematic performance can be found in the research conducted by other practitioners and scholars (Wilson, 2002; Dixon, 2007; Jamieson, 2008; Chatzichristodoulou, 2010; Sant, 2013; Abrahams and Jamieson, 2014). I consider telematic theatre to be a subset of telematic performance, which is a subset of telematic art alongside telematic installations.

a production, which requires not only substantial funding, but also the synchronisation of all logistic and creative aspects between geographically dispersed teams. In addition, my research (Hanganu, 2022) has revealed that even fewer examples could be designated as *dramatic* theatre, featuring psychologically driven characters and a coherent and rather traditional storyline. Most telematic art is inscribed in the broad categories of performance, dance, installation art and what Lehmann calls 'postdramatic theatre' (2006). The latter sees the dismantling of traditional narrative structures and, to borrow Michael Kirby's terminology (2005 [1987]), the dissolution of strongly matrixed characters that are the epitome of 'complex acting'. Rather unusual in this field, our telematic performance is part of the tradition of psychological realism, notwithstanding its formal departure from the spatial unity of the classical theatre auditorium. While the pandemic has boosted the field of telematic theatre out of necessity – what I have termed elsewhere 'force-majeure theatre' (Hanganu, 2020: 14), telematic theatre is likely to remain a niche, at least until telepresence technologies become more stable and capable of truly simulating full presence. Even so, our project can prepare artists and audiences for the advent of technological presences on stage (telepresent and robotic performers) and the wider integration of technology into performance. By this, I refer to a *meaningful* integration that has the potential to enhance the subject being explored.

The workshop participants' character files and opinions on robots have served as a reference point when writing the play and also when making acting choices concerning the robot. Most workshop participants in the three countries believe that care robots will become common within ten years, hence the setting of the action in the year 2032. Furthermore, the predominant view expressed by children and adults was that robots should be robots, although preferably humanoid, without striving to attain perfect similarity with the human form or voice. This seems to point towards the theory of the *Uncanny Valley* as formulated by Masahiro Mori in 1970, stating that a robot will elicit revulsion and fear the more it resembles the human form without attaining perfect similarity (Mori, 2012 [1970]). Interestingly, some of the seniors expressed their preference for a robot carer that shows no emotion, since emotion could perturb its ability to act efficiently in crises. This view informed how the robot behaves in the fibrillation crisis scene – as an efficient

and unemotional medical device. Despite the influence of the workshops on the resulting performance, there is no systematic link between them. The playwrights did not aim for a statistical rendition of all the participants' views, which are anyway hard to unify.[3]

The potentially deceptive nature of social robots is part of the ethical concerns surrounding them. A social robot simulates human behaviour to facilitate natural interaction with users. In the process, it is argued it might lead one to believe it has feelings, emotions and a human-like understanding. However, Mark Coeckelbergh maintains that we usually like the illusion created by social robots and willingly go along with it (2019: 105–127). After all, we are still 'romantic cyborgs', often under the spell of our technologies or trying to go beyond them (Coeckelbergh, 2017). Seen in this light, robots are inherently theatrical, presenting users with an often-pleasurable tension between fiction and reality. At what point *does* a robot become deceptive, though? The performance plays with the fine and arguably dangerous line between reality and illusion in the relationship between the elderly Laura and Ogmios.

Imaginary Robots

The six virtual characters populating the *Imaginary Robots* platform are also not exact depictions of the characters created by workshop participants. Rather, the 3D artists took inspiration from all of them, trying to cover as broad a range of robot categories as possible. The artists came up with names suggestive of each robot's primary functions: Dancing Robot, Friend Robot, Nurse Robot, Sports Robot, Reflective Robot and Storyteller Robot. The characters had a 3D-modelled body and an associated chatbot[4] powered by the GPT-3 text generation algorithm, the state of the art in conversational Artificial Intelligence for the period 2020-2022. The chatbots could communicate both in writing and in spoken language – initially, in all the languages supported by Google Translate. However, we soon discovered that

[3] For a detailed analysis of the workshop participants' views on social robots, see Vinny Flaviana Hyunanda and José Palacios Ramirez's study in this book, *Aspirations and Expectations: A Social Perception Study About Imaginary Robots*. For a detailed account of the playwrighting process, see Bianca Trifan's essay in this book, *Devised Theatre Meets Telematic Theatre*.

[4] A chatbot is a computer program that can converse with users in real time.

the content filters only worked for English, while the quality of the chatbots' replies was much lower in Romanian and Italian, with a slightly higher quality for Spanish. The text-quality problem for 'remote' languages such as Romanian has also been noted in the case of the more advanced ChatGPT (Rudolph et al., 2023: 8). To avoid inappropriate (mostly lewd) and low-quality content, the multilanguage function was taken out. The 3D models could be rotated by users and would also respond to the conversation with predefined animations rendered in real time via the Unity game engine.

The platform was inspired by *net.art*[5] to the extent that it was conceived as an Internet-bound work that could not exist offline (the software used is indeed Internet-dependent). Bestiaries were another reference. These are medieval collections of stories containing illustrated descriptions of real and fantastic animals, plants and even rocks (The Editors of Encyclopedia Britannica, 2013). The *Imaginary Robots* platform was intended to be a bestiary of robots and while it did not offer Christian allegories with a moralising purpose, as medieval bestiaries did, it was intended to serve the educational purpose of familiarising users with the problematic of AI and social robots. Another inspiration source was *A-Volve*, the famous interactive artwork by Christa Sommerer and Laurent Mignoneau (1994) consisting of a pool of water with virtual creatures born out of 2D drawings made by the visitors. Once scribbled on a tablet, the creatures took on a life of their own in the pool of water following the evolutionary principles embedded in the code written by the artists. The creatures interacted among themselves (for example, by devouring one another or mating) and also responded to the visitors' touch. This 1994 work which was awarded the Prix Ars Electronica (Golden Nica) is part of the lineage of today's complex 'virtual beings'.

The field of 'virtual beings' is rapidly expanding in areas like video games and various forms of interactive storytelling (e.g., Fable Studio), marketing (virtual influencers), virtual artists (e.g., Hatsune Miku), education (virtual tutors), virtual news anchors, customer interaction services,

[5] *Net.art* is a term coined by artist Vuk Ćosić at the beginning of the 1990s. It broadly describes artworks created specifically for the Internet (Corby and Baily, 2013: 21). Initially, *net.art* was an artistic movement that aimed to contest the commercial circuit of artworks. Moreover, the artists had a Utopian vision of the Internet as a democratic space of freedom from institutions and geopolitical borders (Bookchin, 2006: 68–73). Subsequently, several *net.art* artists adopted a critical stance towards the Internet.

AI replicas of deceased humans and virtual companions (the list is not exhaustive). The Virtual Beings Summit offers the following definition:

> Virtual Beings are digital characters with the ability to grow, to build two-way relationships with humans and are, in many cases, powered with AI. Think virtual influencers like lil Miquela all the way to AI assistants like Alexa.' (*What Is A Virtual Being And What Is A Virtual Society?*, n.d.).

By this broad definition, the six *Imaginary Robots* are virtual beings powered by AI but, unlike many examples, are not commercially oriented.[6]

The platform uses GPT-3 by OpenAI and was trained on some of the texts written by the participants, but also specifically written Q&A and open-access articles. Nevertheless, as one of the main testers of the platform, I contend it is unclear in practice to what extent the (insufficient) training influenced each imaginary robot's 'personality'. Moreover, the Storyteller Robot's training rather breaks the flow of the human-robot conversation by creating hypertextual connections to the robot monologues written by workshop participants. I had strived to create a general character file for each imaginary robot, hoping that they would introduce themselves and their functionality to users, who would thus think: 'What if this robot were real?'. I had intended a cultural reference to Luigi Pirandello's play, *Six Characters in Search of an Author*, as I had trained each chatbot to lament its virtual state and wish for actuality as a mechanical robot. However, the virtual robots' degree of randomness and lack of memory (even short-term) made them contradict themselves with every reply. In fact, the only interesting part of the conversation was precisely its degree of unpredictability, not the big chunks of text that had been preset for specific questions. Often, the chatbots would spout unintelligible text, even sequences of code or, before the multilanguage feature was taken out because of content filter issues, they would switch between languages without any apparent reason. The robots' imperfect mimicking of emotional responses via their limited set of animations was humorous. The platform thus made use of an aesthetic of failure (White, 2002), considering that the virtual robots were unable to meet the communication demands of human-to-human conversation. I would argue

[6] That is why the platform will probably be discontinued at the end of the project – the costs of keeping it alive would be too big to maintain the open access.

that chatbots and virtual beings are as theatrical as social robots since they try to 'act human' or at least 'act living'. The user becomes similar to a theatre director, defining a 'situation' through its prompt to the robot, namely the conversation context that the robot will try to identify and enter its assigned 'role'.

Aiming to stir users' imagination about future robots and their potential roles as caregivers and companions, the *Imaginary Robots* platform addressed the challenges and opportunities of human-AI interaction. However, the textual content offered by the virtual robots is highly unlikely to have served its original educational purpose, considering that the robots' output is mostly uncontrollable, while preset-only replies would have made them tedious. In Large Language Models, content generation is notoriously flawed at the level of truth (Rudolph et al., 2023). The imaginary robots may have still attained their reflexive goal, but rather via their specific technological characteristics, made apparent by their various glitches and failures. By creating a playground for users to test what AI can and cannot do, the imaginary robots may have stimulated critical thought beyond temporary fascination. However, there are virtual beings in which the carefully curated content may have attained a more impactful social dimension. For example, *Being* by Rashaad Newsome, which was awarded the Golden Nica at the Ars Electronica Festival in 2022 (Newsome, 2019).

Conversational AI and generative algorithms more broadly are increasingly appealing to artists and have an immense potential to restructure the art world, including theatre production (for the better or worse).

Book structure

The volume is divided into two parts. Part I, *Robots and Social Realities*, includes three of the studies conducted in the project covering the socially relevant themes of migration and human-robot relationships. The first essay, *Romanian Migrants, Their Left-Behind Parents and the Technology Between Them: A Qualitative Study*, is an analysis by sociologist Mircea Kivu of the 26 in-depth interviews with Romanian emigrants and elderly parents taken by journalist Georgiana Vlădoiu through rigorous field research. Apart from the family relationships, the study also presents the lives of migrants and their parents as they emerge from the interviews and investigates whether the

respondents see the opportunity of being helped by robots in the future. Anthropologists Vinny Flaviana Hyunanda and José Palacios Ramirez from UCAM, Spain, consider the workshop participants' perception of social robots in *Aspirations and Expectations: A Social Perception Study About Imaginary Robots*. The authors make use of the character files and the questionnaires completed by the participants before and after the workshops. The ensuing *Imaginary Robots* platform was tested in quasi-experimental sessions with children and seniors, who were then invited to assess their experience of interaction via a questionnaire. Their replies were interpreted by Vinny Flaviana Hyunanda and Práxedes Muñoz Sánchez from UCAM in *They are not human but 'human' – A Study About Experience With Virtual Robot Models and Perception Among the Elderly and Children in Italy, Romania, and Spain*. In the concluding essay of Part I, Paola Cagna, Isnaba Joana Miranda and Ermanno Nardi from Industria Scenica (Italy) describe how the community was involved in different stages of the creation process of *Tele-Encounters: Beyond the Human*. This approach is aligned with the guiding principle of Industria Scenica, namely that culture and community are strongly interconnected and communities are responsible for the culture of the place they live in.

Part II, *Theatre Beyond the Human*, covers the creation and presentation process of the *2032 SMART-FAMILY* telematic theatre performance. In *A Case Study of Audience Engagement in Telematic Theatre: 2032 SMART-FAMILY*, theatre director Marina Hanganu and sociologist Mircea Kivu analyse the audience feedback from Romania and Italy, drawing links between dramaturgical choices and the audience's perception of the performance. The collaborative playwrighting process is presented by Bianca Trifan in *Telematic Theatre Meets Devised Theatre*. Through the lens of her research into devised theatre practices, Trifan offers a comprehensive view of the stages of writing the play and constantly adjusting it in the rehearsal room. In *Video Directing in Telematic Theatre: Means and Meaning*, film director Armine Vosganian looks into the camera work behind the hybrid performance. Referencing other telematic performances by Marina Hanganu in which she was either an audience participant or an actress, Vosganian creates a mosaic of the various roles video image can play in telematic practice. Lastly, the interview section of the book comprises detailed accounts