How can cognitive science assist makers of devised theatre? While this form has become a familiar feature of Western performance, little has been written about principles that underlie its many disparate expressions. Indeed, publications on the topic describe widely differing approaches to making theatre (e.g. Williams 1988, 1999; Oddey 1994; Callery 2001; Bicât and Baldwin 2002; Govan, Nicholson and Normington 2007; Graham and Hoggett 2009; Mermikides and Smart 2010; Swale 2012; Syssoyeva and Proudfoot 2013, 2016; Robinson 2015). A prolific diversity of processes and styles is evidence of the exuberant health of the form, but students, practitioners and researchers could be assisted by concepts and terms that identify both commonalities and differences among and between different practitioners. Theatre people have long had components (evolving mainly from Aristotle and Stanislavski) with which to analyse, describe and prepare scripted theatre, but in written drama these derive from the linear temporal structure of a fixed narrative – the script. Devised theatre, however, is authored through action, with meaning arising dynamically from the simultaneous interaction of multiple people, objects and phenomena. Consequently, we need different concepts and terms to describe both the processes and products of devised theatre.

In this chapter I’m going to describe some ideas from cognitive science that identify underlying principles that may be applied across varied devising processes. In doing so, I hope to provide practitioners, researchers and students with some concepts that can assist in describing features of devising that might otherwise be difficult to define or even recognise. I also hope that researchers from disciplines other than theatre may find these conceptualisations useful in examining how devised theatre can be a useful forum for the exploration of intersubjective creativity. This possibility arises through the application of concepts and terms from cognitive science to performance processes, thus creating a degree of ‘consilience’ (see Bruce McConachie’s Chapter 26 in this book).

Also known as collaborative creation or ensemble theatre, devised theatre has moved from an esoteric fringe status in the second half of the twentieth century to a presence at multiple levels of activity – community theatre, regional theatre, training programmes and even the most commercial of mainstream projects. Despite the prevalence of devised theatre, it is difficult to define. It is a genre in which dramatic material is created through a variety of processes in a multiplicity of forms and contexts, and for many different purposes. For many people, the default description of devised performance has been what it is not; the
Western tradition in which a playwright creates a script which is then interpreted and staged by director, designers and actors. Indeed, one of the most significant works on devising in theatrical scholarship acknowledges that the common understanding of devising is that it is ‘a mode of work in which no script – neither play-text nor performance score – exists prior to the work’s creation by the company’ (Heddon and Milling 2006, 3). While this statement is generally applicable as a description, it has some limitations as a definition of devised theatre. Firstly, as the description can apply to improvisatory performances, it does not distinguish these from devised productions. While devising processes incorporate improvisation, a devised piece that is presented to an audience generally has a ‘performance score’ that enables it to be repeated. Improvisatory performances are, by their nature, productions of meaning that are simultaneously generated and expressed.

Secondly, techniques of devising are now applied to existing scripts, playwrights participate in devising processes, and collaborative improvisations can result in published plays that are then performed by other practitioners. These phenomena have only increased in scope in the decade since Heddon and Milling published the first edition of their book. For example, one of the best-known devising companies, Complicite, uses the same practices on both script-based and non-script based shows. In describing the company’s first approach to working with an existing text (Friedrich Dürrenmatt’s The Visit), Complicite member Mick Barnfather said about the rehearsal process: ‘Our approach was the same […] It still felt just as exploratory. Yes, there was a text, but we were experimenting and doing exercises in a similar way to find the style’ ([Fry, 2013] in Saunders 2015, 177).

Recognising the limitations of the common understanding of devising, Heddon and Milling suggest that devising might ‘be best understood as a set of strategies’ (2006, 2) that generate, shape and edit material into an original performance. These strategies include improvisation, researching, designing, writing, choreographing, discussion and debate, editing and rehearsing, among others. Again, while this description is broadly applicable, it has limitations if we seek to use it as a definition. It is both possible and likely that a playwright might also employ some or all of these strategies in writing a script. Since similar strategies are taking place in the creation of both devised and scripted theatre, the strategies themselves are not definitive of one form or another, but are illustrative of tendencies. It is probably useful to think of these strategies forming a spectrum of theatrical creation. In one area of this spectrum, a solo playwright might be mentally improvising, choreographing and editing dramatic material that will be recorded in the form of a written script. In another area of the spectrum, a group of practitioners would also be improvising, choreographing and editing a performance – but with a crucial difference — they incorporate the embodiment of meaning in its creation. The intersubjective embodiment of a solo playwright’s script does not occur until it is rehearsed and performed. (I use the term ‘intersubjective embodiment’ to distinguish this phenomenon from the way that language is embodied in the solo playwright’s body-mind as he or she writes). As I described in Embodied Acting (2012), our brains process written language differently from speech. As the linguistic component of a devised piece arises in the form of speech, its meaning is expressed simultaneously with that of the non-verbal communication that accompanies it. The embodied nature of the process emphasises the extent to which non-verbal communication carries meaning and thus encourages multi-modal expression, rather than prioritising language as a written script does. Additionally, as devising is generally (but not always) conducted in groups, it facilitates polyvocal expression. This disrupts the implicit hierarchy of creativity in traditional theatre in which director and actors ‘interpret’ an individual playwright’s propositional meaning. Devising practitioners also recognize that the social and physical environments within which
they work provoke, affect and contextualise meaning. Thus, people (performers, designers, writers, musicians, technicians, etc.) and physical features (space, location, objects, light, sound, temperature, textures and so on) are all recruited in the creation of a piece. So, as the first step towards identifying distinctive tendencies of devising, one can say that it is the embodied creation of multi-modal (rather than predominantly linguistic) meaning.

Situated cognition theory claims that what people perceive, how they conceive and what they do all develop interactively and are tied to their environment. In shows that are created entirely from improvisation, pre-known knowledge can be said to reside in the declarative and procedural memories and imaginations of the improvisers. The interactions of the improvisers create new and often unexpected knowledge/meaning, especially since devising practices deliberately incorporate imagined circumstances both in preparation and performance, a feature that links embodied and material phenomena with fictional worlds. I propose that this, among other factors, prompts the stimulation of ideational combination, identified by neuropsychologist Arne Dietrich as a central process of creativity (2016). Dietrich rejects theorisations of creativity that make it a specialised activity with its own neural signature. Instead, he insists that as a brain mechanism, creativity must be embedded and distributed. Drawing on evolutionary biology, he posits a generate-and-test process of ideational formation among neural networks and identifies a feature known as a Predictive Goal Representation, which establishes merit parameters for the fitness of hypothetical functions. This predictive goal state links explicit and implicit systems, which takes account of both conscious deliberation and intuitive insight in the creative process. As ideas are combined within the merit parameters, their degree of fitness determines whether they will move into fringe working memory and from thence to core working memory for conscious consideration. I suggest that the multi-modal activity that is prevalent in devising at the behavioural level is a significant stimulator of mental cross-modality, encouraging variety in the process that Dietrich describes. An example of how this process might be expressed in behaviour can be found later in this chapter, in the description of studio work in embodying the qualities of paper. In the journey of transposing this abstracted movement into a human context, the movement qualities of the practitioners behaving like crumpled-up or torn paper can be thought of as a set of merit parameters for which the body-mind is seeking a match that is congruent with ‘human behaviour.’ Multiple ideas can arise about what would provoke a person to ‘crumple,’ to ‘tear’ or be ‘torn.’ For Toby Jones, the actor describing this activity, the hypothetical ‘fitness’ expresses itself as the emotion provoked by being ‘torn apart’ from a loved one. Jones associates this with the world of Chekhov’s plays. Other practitioners could well find different ‘matches,’ such as a personal memory of parting, or an imagined scene of a family being separated. These and other possible ‘matches’ demonstrate the fluidity of potential meaning in a devising process, which leads to my next proposal.

A common theme among devising practitioners is the importance of process – prioritising this over ‘product.’ So I propose that, because the meaning of a devised performance is developed over time through process, devising is fundamentally improvisatory in nature, whether or not practitioners use the term or follow established modes of verbal or physical improvisation. What I mean by improvisatory is that at the start of the process, the full content or meaning of the eventual performance is unknown. Evidently there is a known goal to create a show, and that goal can be focused by various criteria – for example, by theme, by intent, by process, or by source material, among many other possibilities. These criteria form sets of parameters (or constraints) for Predictive Goal Representations in the minds of the members of the devising group. As they work together to generate material, the meaning of each component is contingent on its interaction with others during the
process of devising. Consequently, the overall meaning of the final performance is both emergent and distributed. This way of understanding improvisation follows studies of verbal improvisation conducted by cognitive psychologist Keith Sawyer (e.g. 2002, 2009). In these studies, Sawyer identified contingent meaning in a chronologically sequential structure of verbal turn-taking in improvisation; the overall meaning that arises is emergent because each participant's contribution is dependent on preceding contributions and not apparent until the whole temporal process is completed: ‘Emergence is commonly observed in complex dynamical systems – systems with many elements, organised into multiple levels of subcomponents, with multiple interactions among elements and subcomponents’ (Sawyer and DeZutter 2009, 83). This concept of emergent meaning within a dynamic system plays an important part in identifying the creativity of devising as ‘distributed.’

Cognitive neuroscientist Edwin Hutchins is one of the most significant researchers in the field of distributed cognition, and has developed the concept of the cultural-cognitive ecosystem to describe the ways in which all human cognition is ‘distributed.’ As Bruce McConachie states, ‘[…] we could say that all performance events are parts of one or several cultural-cognitive ecosystems’ (McConachie 2015, 93). McConachie demonstrates how Hutchins’ theory can be applied to theatrical performance by using it to analyse the emergence of musical comedy in London and New York in the early twentieth century. While I do not have space here to apply Hutchins’ theory to devising, it serves to demonstrate the way in which cognitive scientists acknowledge the influence of multiple factors, including evolutionary biology and culture, in human cognition and behaviour.

Sawyer and DeZutter’s application of the concept of ‘distributed cognition’ to creativity challenged the traditional concept of it as a mental process that takes place in an individual’s head. By applying interaction analysis to some theatrical performances developed through improvisation, they described a non-individualistic creative process that they referred to as ‘distributed creativity’ (Sawyer and DeZutter 2009, 81). While the focus of this study was predominantly on verbal turn-taking (although non-verbal communication was acknowledged), devising can also be thought of as distributed creativity. In contrast to the sequential turn-taking of verbal improvisation, the interaction of components of meaning can be both simultaneous and reciprocal because of the tendency of devising to be collaborative and multi-modal, de-emphasising the primacy of language. While speech may be involved, practitioners are also sensitive to factors such as space, image, sound, rhythm and physicality. This approach allows for non-linguistic meaning to play its part in constructing the meaning of a performance.

Examples of this multi-modal approach to devising can be found in the teaching of the school that has produced more devising companies than any other single institution worldwide. This is the Ecole Jacques Lecoq in Paris. I describe aspects of Lecoq’s pedagogy and its relation to embodied cognition in Chapter 16, and that chapter can fruitfully be read in conjunction with this one. As we described in our General Introduction, our section aims are teleological and there will inevitably be some overlap of topics between sections. Here, the connection between the two chapters is intentional. Using Lecoq’s work as a route to identifying principles of devising is not intended to prioritise his approach over others; as I mentioned earlier, there are a multiplicity of devising methods. Given Lecoq’s accessible articulation of theatrical creativity, I hope that some common principles can emerge through an examination of his work, and that of devising practitioners who use his methods. I’m going to focus on some aspects of Lecoq’s pedagogy that, given a cognitive analysis, can be seen to promote creativity in devising practice. These are his neutral mask ‘identifications’ work; transposition – the situating of embodied phenomena in imagined environments; and
the explicit and conscious use of constraints, which creates a flexible and fluid conceptualisation of dramatic structure that is consistent with Dynamic Systems Theory (DST), a framework for modelling interactive behaviour that I will describe in more detail later.

Lecoq's connection with the growth of devised theatre in the twentieth century was stimulated by his explicit identification of improvisation, analysis of movement and the exploration of collaborative creativity as the three pillars of his pedagogy. Within this overall framework, three pedagogic features that he developed have contributed to the remarkable amount of devised theatre companies that originated at his school or that use his techniques. Firstly, 'Autocours' (self-taught courses) were sessions in which groups of students worked independently to create short performances on given themes that they presented to the rest of the school. Secondly, the 'enquête' ('investigation') required students to participate in the activities of a working environment like a hospital, fire station or factory for four weeks and then create a short performance that 'replayed' their experiences in a compressed time span. Thirdly, the 'commande' was a commission for a final self-created work presented at the end of the second year. Each of these practices required students to discover how they could autonomously generate original dramatic material. As theatre practitioner Nir Paldi's comments later in this chapter demonstrate, Lecoq graduates consciously acknowledge the connection between these activities and their professional devising work.

As I mention elsewhere, Lecoq believed that the starting point for theatre is not the text of a play, but an actor's playful engagement with sensorimotor experiences of his or her physical and social environments. This focus on the actional domain of experience correlates with one of the foundational concepts of embodied cognition – that sensorial and motor experiences form the neural foundations for mental concepts. Lecoq's pedagogy explores the experiential domain of action through a framework that he calls 'dynamics' – combinations of rhythm, force and space. This framework is significant as he is encouraging his students to initially engage with experience at its sensorimotor level, rather than beginning with language as one does in the tradition of scripted theatre. These experiences are initially framed by training with the Neutral Mask, a full-face mask with a neutral expression. In the Neutral Mask 'identifications' work (described in Chapter 16 of this book), actors consciously embody the rhythms of movement found in natural and social environments. In Embodied Acting (2012), I demonstrated how the non-habitual movement patterns of Neutral Mask training can stimulate an altered sense of self through proprioceptive awareness. Importantly, with regard to the concept of ideational combination, Neutral Mask identifications work encourages performers to experience themselves metaphorically – for example as dough, wind, water, cardboard, liquids or, in the example described here by British actor Toby Jones, as paper:

when we were studying paper and studying the ripping apart of different densities of paper and then studying embraces and watching paper un-crumple on its own or being crumpled back up … at the end of the lesson just seeing all of this paper strewn all over the classroom and a class that had really been about embracing and tearing and the tearing apart and coming together and the sheer emotion in the room, it just looked like an autumnal scene from a Chekhov play of people parting or coming together … it's very concrete and real.

(Jones in Evans and Kemp 2016, 205)

The embodied experience of the Neutral Mask identification provokes Jones's imagination to provide a context – this is in itself an example of ideational combination – seeing shreds of paper as leaves in autumn, and the actions of crumpling and tearing as embracing and pulling...
apart. Arne Dietrich talks about speed of processing being a factor in ideational combination. A pre-calibrated and weighted neural network creates processing speed differentials for different kinds of information. Some types of information are processed more expeditiously than others, moving them more rapidly from ‘fringe working memory’ to conscious awareness. For Jones as a trained actor who frequently inhabits the fictional worlds of playwrights, the association that most rapidly contextualizes his experience is the emotional world of a Chekhov play. This particular leap of creativity has happened spontaneously and is an example of the situating of embodied phenomena in imagined circumstances.

This process is consciously encouraged by Lecoq through activities that he terms ‘Transpositions,’ where the patterns of movement that are experienced in the Neutral Mask identifications are transposed into human behaviour and social contexts – as Lecoq explains:

The work done on identifications has to be reinserted into the dramatic dimension. For this purpose I use the transference method which consists in basing oneself on natural dynamics, on action gestures, on animals, on materials using them for expressive purposes in order to achieve a better playing of human nature. The objective is to achieve a level of theatrical transposition, going beyond realistic performance.

(Lecoq 2001, 44)

Lecoq proposes two approaches – firstly to humanise an element or an animal giving it a behaviour or a voice and relating it to other elements or animals. The second is to reverse the process by beginning with a human character and gradually allowing the elements or animals in which it is grounded to show through.

Beyond the stylistic results that support performers in creating non-realist theatrical forms, I propose that Lecoq’s transposition has another effect that stimulates creativity. Geoffrey Rush, another Lecoq-trained actor, refers to the process of the school as ‘synaesthetic discovery’ (Rush in Evans and Kemp 2016, 405). In the clinical sense, synaesthesia is a neurological phenomenon in which stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway. Himself a synaesthete, Rush is using the term more loosely than in its clinical sense to describe instances where embodied experience is shifted from one mode or context to another – Lecoq’s transposition.

For some students, this process can be extremely vivid. Theatre practitioner and teacher Jenny Gilrain writes of her experience of working with Lecoq on the dynamics of music in 1991. After listening to Bartok’s Andante Tranquillo, students are asked to describe it verbally using the vocabulary they developed while working with the Neutral Mask, a vocabulary of natural phenomena and man-made materials.

LECOQ: What color is it? Where is it in the space? In what direction does it move? How does it move? What path does it take? What is the dynamic? The space? Shape? Element?


(Gilrain in Evans and Kemp 2016, 128)

Lecoq then plays the music again and asks the students to stand and watch it:

Twenty-four years later, I can still see the music in my mind as I saw it then: One thin creeping vine enters through the crack around the door, then another and another. The
vines grow thicker and climb the walls, sprouting leaves, covering the ceiling. Then the whole room begins to spin. A hole opens up in the middle of the floor, sucking everything down. Spiraling down, down, down.

(Ibid)

Gilrain reports that her experience of seeing the music in this way was not unique — all the students in the class pictured the music in varying ways. Rather than considering this phenomenon as induced synaesthesia, which is, after all, an involuntary condition, this could be thought of as consciously stimulated metaphorical thinking resulting in imaginative projection. In neuroscience, the question of the relationship between metaphorical thinking and synesthesia is very much a live one. However, there are studies on linguistic synesthetic metaphors (cross-modal metaphors) that show that their mapping is consistent with Lakoff and Johnson’s conceptual metaphor theory — in other words, that they are embodied metaphors (Yu 2012). Glenberg and Gallese’s Theory of Action-Based Language (2011) suggests that language acquisition, comprehension and some aspects of production, including gesture, can be related to the sensorimotor neural networks involved in physical actions. If we accept that language is based in action, as Glenberg and Gallese propose, then it is possible that the same neuronal phenomenon involved in linguistic synaesthetic metaphors could apply to the physical cross-modality of Lecoq’s work. This hypothesis is supported by researchers examining the effect of action on thought. In this field, several studies suggest that (to quote the title of a particularly relevant article) ‘Doing Gesture Promotes Learning a Mental Transformation Task Better Than Seeing Gesture’ (Goldin-Meadow et al. 2012).

In the exercises that I’ve described, Lecoq is consciously using a variety of constraints. In the Bartok class, the music is a constraint, both for the attention and subsequent physical actions of the performers. It is not proscriptive — each performer is free to respond in his or her own way, but the music creates a set of parameters for his or her behaviour. This behaviour has already been categorised through the Neutral Mask identifications, but in those the parameters are more defined — for example, the movement dynamics of dough are different from those of fire. Lecoq refers to spatial, temporal and numerical constraints, but he also considers dramatic styles to be constraints. Conceiving of theatre as sets of interacting constraints creates parameters of attentional focus that facilitates cross-modality. In the Bartok example, the parameter of the neutral mask vocabulary depends on the modes related to sensorimotor and visual perception. The conscious awareness that students have developed of their own proprioceptive and interoceptive patterns allows them to apply these modes to the aural mode in a targeted way that structures interaction and provokes the imagination. This way of minding means that performers who train with Lecoq come to conceptualise features of performance as sets of parameters that can intersect with one another, can contain one another and can interact with one another. This conceptualisation is apparent in this extract from an interview with drag artist Nir Paldi (N.P. in the following extract), a 2005 Lecoq graduate who formed the London-based devising company Ad Infinitum:

N.P. In the auto-cours at Lecoq —this is the part of the training where you make a new piece of theatre every week — you learn to work within a constraint. We work with constraints too, and as a collective, but unlike auto-cours in which there is no leader, there is always a person who is leading our process.

V.A. What do you mean by constraint?

N.P. So for Light, essentially, the constraint is complete darkness and actors lighting themselves. For Ballad, we are talking about war and the Israeli–Palestinian conflict. Or
the Israeli psyche through cabaret and drag. In Translunar, it’s without words, and we are traveling from youth to old age using hand-held, full-face masks.

V.A. So when you start the rehearsal process, you don’t know where it will lead, all you have is the constraint?

N.P. That’s right. We just went through this process again with Light. This is how we practice what we took from Lecoq: we challenge ourselves to completely reinvent the form every time we approach a new theme and a new story. You start with the constraint, then you develop the constraint, then develop the form within the constraint; then you ease the constraint to let the story breathe.

(Ackermann in Evans and Kemp 2016, 331)

Paldi identifies several different features as constraints: the use of darkness, the topic of the Israel–Palestine conflict and the topic of ageing. He also acknowledges that a performance arises through the process – in the terms of cognitive science, that it is emergent meaning. The constraints can be understood as sets of parameters for Predictive Goal Representations as described earlier. An example of the ideational combination that arises can be seen in the show Ballad of the Burning Star that Paldi refers to, which uses drag and cabaret to address the Israeli–Palestinian conflict. These features were considered highly original by many critics, with the show winning several awards.

The devising practice of using varying forms of constraints can be understood with DST. A dynamic system is a flexible, complex, time-dependent and emergent system in which simultaneous contingencies stimulate the reciprocal interaction of components.

DST provides a model that describes the flow of relationships among the components of a whole phenomenon. As this model acknowledges the real-time ‘circular causality’ of elements within a system, it is well-suited to describe the ways in which people, environment and actions simultaneously affect one another in the context of devising a dramatic performance, as well as presenting that performance. Originating in mathematical theory, DST has been applied by neuroscientist J.A. Scott Kelso to model properties of human cognition and social behaviour in a field known as coordination dynamics. Kelso’s overall goal is to understand how human beings and human brains coordinate activity. In theatre scholarship, John Lutterbie has applied DST to performance in Towards a General Theory of Acting (2011). Lutterbie uses a description of UK director Katie Mitchell’s process of adapting Virginia Woolf’s The Waves at the UK’s Royal National Theatre as an analogy for the neural activity in the brain – how patterns of neural networks are established and reconfigured in response to different stimuli. (For more on DST, see Chapter 17 by Gabriele Sofia in this book.)

Lutterbie also points out that, in certain ways, neuronal activity is patterned like everyday activity. In this, he follows the principal claim of coordination dynamics, which is that the coordination of neurons in the brain and the coordinated actions of people and animals share a common mathematical or dynamical structure. It is this claim that leads me to suggest that the collaborative creativity of devising processes could be a useful forum for understanding creativity at both the social (distributed creativity) and the neuronal levels (ideational combination). As Sawyer and DeZutter state: ‘When cognitive processes are distributed across groups, they become visible, and scientists can observe them by analyzing the verbal and gestural interactions among the participants’ (2009, 81). The examples of Lecoq’s practice that I’ve given serve, I hope, as specific examples of some of the tendencies of devised theatre. These highlight how its social and behavioural organisation stimulates both interactive and neural processes of creativity.
Summary

In this chapter, I’ve proposed that we can identify devised work as having the following tendencies:

1. The embodied creation of multi-modal (rather than predominantly linguistic) meaning, which arises in a context formed of multiple agents of meaning; not only people (performers, designers, writers, musicians, technicians, etc.) but also the physical environment: space, location, objects, light, sound, temperature, textures and so on.

2. The interaction of these agents of meaning links embodied and material phenomena with imagined circumstances, both in preparation and performance. This, among other factors, facilitates the stimulation of ideational combination, a central process of creativity.

3. As meaning emerges from the exploratory devising process, practitioners select aspects to create a form that is (to a greater or lesser extent) ‘fixed’ to create a performance score that facilitates repeated presentations. This factor distinguishes devised theatre from improvisatory performances.

4. All of these features interact with one another in a manner that can be modelled as a Dynamic System in which process is intentionally structured to promote emergent meaning.

References


Devising – embodied creativity in distributed systems