Measuring the improvisation process

How to quantitatively measure the quality of improvisation processes in a theatrical simulation environment

Tom van Eerde

s0138371

University of Twente

University supervisors
Dr. Ir. Klaasjan Visscher
Prof. Dr. Ir. Olaf Fisscher

Practical supervisor
Gijs van Bilsen MSc

21-2-2013

Contents

Abstract

In the last three decades the field of organizational improvisation was established in an effort to provide scientific insights into this phenomenon. Organizational improvisation can be shortly described as: “The convergence in time of planning for and execution of an action”. First generation research into this topic was performed by making comparisons between the business environment and areas where improvisation was part of the routine, such as playing Jazz music or theatre. Second generation research started to take the concept of organizational improvisation into the business environment in order to establish how improvisation works in different environments.

Research on the relation between organizational improvisation and leadership was performed in 2010 by Gijs van Bilsen MSc. In this research he uses the method of theatrical simulation to establish how new product development teams (NPD-teams) work. The aim is to establish what the effect is of a directive; servant or rotating style of leadership on the improvisation process quality as well as improvisation product quality in such a team. The quality of a scene was determined by making use of a few judges who use their knowledge and expertise in order to ascertain the product and process quality of these scenes.

The aim of this thesis is to develop a more objective way of judging these scenes. This leads to a more reliable (judgment parameters are clear) and comparable (the judges’ influence is taken out) method of deriving the scene quality. In this thesis the developed method is only applicable to the process quality of the scenes; determining product quality is not part of this thesis.

In order to create a starting point for developing a method, indicators of the improvisation process quality were described based upon scientific literature. One of these indicators is the occurrence of ‘Yes, anding’. When actors in a scene interact with each other in theatrical improvisation they make offers to each other, an actor in the group then uses such offers to extend the scene and develop new situations. This practice of using an offer to extend the scene is usually visible in an actor replying “Yes, and” (or something similar) to another actor who has just made such an offer. In theory it is supposed the practice of ‘Yes, anding’ leads to a high improvisation process quality. This means it is possible to count the number of accepted offers in a scene in order to derive the quality of the improvisation process.

In order to validate the occurrence of ‘Yes, anding’ as an indicator of the improvisation process quality a method was developed which consist of a manual which describes what ‘Yes, anding’ is; and how it should be counted in theatrically improvised scenes. This manual was used to count the scenes recorded for the research by Gijs van Bilsen, and compared to the subjective judgment provided for the same scenes earlier. This comparison showed some similarity to the subjective judgment; however not significant. The major problem with the method lies in its reliability, because the manual was susceptible to interpretation which leads to a strong variation in objective judgment among different judges.

This problem was attempted to be solved by making a new manual which contained a more narrow definition of what is allowed to, and what is not allowed to be counted when someone is asked to count the number of ‘Yes, ands’ in a scene. This improved the reliability, but the validity was weakened.

Preface

My personality has always been a mix of enthusiasm and chaos, and I always like to think something good must come out of it eventually. The chaos-part however is not helpful when trying to learn how to do proper scientific work. Meticulous precision and planning are much more helpful in this sense, both of which skills I am still struggling to master.

Therefore I feel it is no coincidence the topic of improvisation came on my path in the form of a research topic, different to the way I have always known it; a more or less daily practice in order to cope with a planned and structured world. I think I have learned a great deal by having a project for myself for the first time, it has however taken a lot more time and effort then I had expected, but I guess this is nothing new. I would urge the University of Twente to keep the learning experience of having an individual large assignment, and keep the individual responsibility in it. This is very useful for people like me.

In my opinion no human being can exist without others; therefore some people need to be thanked for their help and patience.

First of all I would like to thank the people who have taken the time to be one of my volunteers for testing the different methods for counting the scenes. I have gladly made use of the time they have provided and the feedback they have given me by their commentary as well as their data. Also I would like to thank the people I have asked to provide (scientific) opinions and feedback; this was helpful in the process of structuration of the work, and formulating research problems clearly.

I would like to thank Gijs van Bilsen MSc for his quick response, honesty and support when I asked his opinion, also the moments when he had to say “I am not here to tell you what to do”. His comments were helpful to me especially when I had a setback and needed some support. Also the clear, no-nonsense commentary of Dr. Ir. Klaasjan Visscher was very helpful and I would like to thank him for providing some much needed structure and expert commentary.

Finally I would like to give a last huge ‘thank you’ to my family, and especially my girlfriend, for not giving up on me and stay positive even when I was in no mood for being a friendly human being.

Tom

1. Introduction

Managers and businesses are increasingly becoming aware that planning for and anticipating on the future is insufficient as a tool to survive in the current business environment (Crossan et al., 1996). Globalisation and technological innovation have led to increased competition and ever shorter product development times (Bettis et al., 1995; Gassmann et al., 1999). To cope with these demanding environment businesses could use a different approach to solve problems and develop new products. Instead of using anticipating and planning, businesses could be run more effectively when a more flexible method of approaching new situations is used. This requires the usage of improvisation, instead of the more classical planning and anticipation approach. (Barrett, 1998b; Ciborra, 1999)

Improvisation is a concept which covers multiple constructs concerned with creativity and spontaneity, and has found its way into organisation science in the past decades. Empirical research on the usage of organizational improvisation has taken place on a small scale in actual businesses environments (Brown et al., 1997; Kamoche et al., 2003; Christine Moorman et al., 1998).

1.1 Research on organizational improvisation using theatrical simulation

Recently, empirical research has also been performed in a simulated business environment applying the method of 'theatrical simulation' (Wagenaar, 2008). This new technique uses improvisational theatre performed by actors as a testing ground for simulating complex interactions between subjects in different settings.

This research uses simulated (theatrically acted) NPD-teams which must complete a group assignment by creating a product that meets certain demands which are stimulating the usage of organizational improvisation.

The NPD-research focuses on the assumed connection between different leadership styles and the process of improvisation- and product quality (Bilsen, 2010). When a leadership style allows room for freedom, the research assumes it is beneficial for the amount of improvisation present. However, the leadership style chosen must also enforce enough control to lead the process to a desired destination, and thus leads to a paradox between freedom and control. The research performed suggests that a relationship exists between the used leadership style, either directive, servant or rotating, and the amount of improvisation possible (Bilsen, 2010).

1.2 Measuring the improvisation process in a theatrical simulation

According to van Bilsens' research a relationship exists between the leadership style chosen and the quality of the improvisation product and process. The correlation between the amount of freedom and control on one side, and improvisation process quality and product quality on the other side is measured by using an intersubjective score of the scenes played. This was put into practice by using experts in the field who gave their opinion about the quality of the improvisation product and process. This step was chosen for making it possible to compare scenes to each other because an objective and viable measurement method for product- and improvisation process quality is lacking (Kamoche et al., 2001, p757).

In this thesis an attempt will be made to suggest which indicator(s) of the improvisation process can be used best in order to measure the quality of the process. It would be preferable to define indicator(s) which is/are quantitative of nature. The judging method used by van Bilsen is

based on the opinion of experienced improvisation theatre actors (improv-actors) who have an insiders' view in the improv theatre scene. This allows them to judge the quality of an improv scene on a subjective level with abstract questions. The usage of a quantitative indicator does not require the judge to be an expert in the field, since the indicator which is being judged is clearly described. This makes the task of judging a scene more transparent and objective since the judgements of judges can be compared to each other, and validated on their reliability.

Apart from the process quality another concept exists which can be used to infer the quality of the scene; the product quality. There are methods available to judge the quality of the improvisation product, one of these methods is the consensual assessment technique developed by Amabile (Amabile, 1982). This method is useful when a concrete product or a description thereof, is available. We are aiming to solve the problems which arise when judging the quality of the process of improvisation. These judging problems, caused by the lack of an objective judgement method, are of a different nature to judging problems related to assess the quality of the product. A product, or the product description, can be broken down to the items which make it have a certain quality. Examples are the build quality, coherence with the assignment or amount of resources used. The 'items' (or indicators) of the improvisation quality are of a different, more subjective, nature. It is for example not possible to objectively measure the amount of material needed in an improvisation process. This difference in nature of the concept leaves us with a problem of not being able to devise one method to judge both concepts. In order to end up with a working model the product quality (outcome) of a theatrical simulation will not be discussed, and we focus just on the process-side of the improvisation quality.

1.3 Research questions

The goal of this thesis is thus to define indicator(s) of the quality of the improvisational process in a theatrical simulation. Improvisational process quality has a number of indicators which have been defined in scientific literature, these are presented in the theoretical framework in chapter two. In order to validate the indicators, scenes subjectively judged by experts will be used to compare the indicator's performance to. This approach will be discussed in chapter three.

The introduction and problems stated above lead us to pose the research question:

'Which indicator(s) of the improvisation process can be used to judge the quality of the improvisation process?'

After establishing what indicators can be associated with the quality of the improvisation process we can further go into the specifics which make an indicator usable in developing a measurement method for the quality of the improvisation process.

We note the previous research performed in this field has used a small group of professionals to judge the quality of the improvisation process (Bilsen, 2010, p38). We are looking for a specific indicator, which is also usable by a non-expert. We therefore pose the following question:

1. Which of the indicators found in literature is suitable for use in a measurement method which judges the quality of the improvisation process?

After we have established which indicator(s) can be used in designing a measurement method we can design an experiment which verifies the chosen indicator(s). The method which has been used up

until now is based on using a subjective judgement made by experts in the field. We will compare this subjective method with the indicator(s) chosen. This leads to the next question:

2. How does the chosen indicator(s) perform on indicating the quality of the improvisation process when compared to a subjective judgement made by experts?

The advantage of using the indicator we have established when compared with the subjective judgement is the increased objectivity since the indicator can be measured quantitatively by any judge. The aim is to decrease the personal bias which occurs when judging a scene, and thus increase the comparability of the judgements. Also it is no longer necessary to arrange experts in the field to judge the scenes, the indicator should be so clear that a non-expert can judge it as well as an expert. This makes the process of judging scene quality easily manageable since a larger group can provide judgements about the quality of the improvisation process.

2. Theory

In this chapter scientific literature will be discussed with regard to organisational improvisation, theatrical simulation and the quality of the improvisation process in order to create a theoretical framework to base our measurement method upon.

2.1 The field of organizational improvisation

We will shortly discuss the current field about the subject of organizational improvisation in order to create a starting point from which we will work towards the assembly of literature which discusses the specific indicators of the improvisation process. In a literature review on the field of organizational improvisation Pina e Cunha et al. have structured the emerging part of the field of organizational improvisation into three generations of theory development (Pina e Cunha et al., 1999, p300). First generation theory development is grounded on improvisation in the arts, specifically where improvisation is expected to be used. Examples of these arts are playing jazz music or specific forms of theatre. This is the first time scholars see the possibility to use the concept of improvisation to tame the classical organizational problem of letting creativity prosper, but at the same time keep control in a business environment (Barrett, 1998a; Bastien et al., 1988; Eisenberg, 1990; Mary Jo Hatch, 1999; Meyer, 1998; Mirvis, 1998; Pasmore, 1998; Peplowski, 1998; K.E. Weick, 1993). Second generation theories ground themselves in empiric and concrete (business) examples, and herewith bring the concept into the business arena, so it becomes the new research field of *organizational improvisation* (Crossan, 1998; Crossan et al., 1996; Moorman et al., 1996; C. Moorman et al., 1998; Christine Moorman et al., 1998; Orlikowski, 1996; Orlikowski et al., 1997; Perry, 1991; Karl E. Weick, 1993). Finally a third generation of theories addresses critical issues concerned with taking the concept of improvisation from the arts towards the field, but fails to address these problems adequately (M.J. Hatch, 1997, 1998; Weick, 1998). After the 1999 articles other authors have taken up the task of addressing problems with taking organizational improvisation to the field. Examples are to be found in the role a team has in the organizational improvisation process and also the limitations of using the Jazz metaphor (Baker et al., 2005; Kamoche et al., 2001; Kamoche et al., 2003; Magni et al., 2009; Mendonça et al., 2004; Sawyer, 2000; Vera et al., 2005).

Summarizing shared characteristics about the concept of organizational improvisation Pina e Cunha et al. have defined organisational improvisation as “conception of action as it unfolds, by an organization and/or its members, drawing on available material, cognitive, affective and social resources”. The most important defining characteristic of organisational improvisation is the limited time between the planning (conception) of an action and the execution of an action. Also the concept of using resources at hand is, or *bricolage* is included in this definition. This definition contains the aspects of organizational improvisation which are shared among the major authors in the field (M.J. Hatch, 1997; C. Moorman et al., 1998; Weick, 1998). We will use this definition of organizational improvisation because it is well funded in related theory and still applicable to our research problem. We are going into the improvisation process quality in a small group, and are thus less concerned with the entire concept of organizational improvisation, but limited to the process of improvisation in a small group or team.

2.2 Using improvisational theatre as a research method

Using improvisation in the arts by taking it to the scientific field was made possible by a novel research method called *theatrical simulation* developed by M. Wagenaar in 2008. This research method was shown in a Masters’ thesis titled ’Simulation in Philosophy’ (Wagenaar, 2008).

In this thesis Wagenaar notes the difference between theoretical, empirical and simulated research. The aim of Wagenaars' thesis is to approach the method of simulation in philosophy analogous to simulation in physics or computer science.

Wagenaar explains the three basic methods of research in science of nature and philosophy; the theoretical, empirical and simulated method. These three methods vary in their approach to research problems. Their most important difference lies in the *field of research*. Theoretical research is located in the *abstract reality* (an environment which allows for logical reasoning), empirical research in *concrete reality* (the 'real' physical world) and simulation in an *artificial reality* (simulated reality, analogous to concrete reality) (Wagenaar, 2008). The aim of simulation in both science of nature and science of philosophy is to construct an artificial reality, which resembles the concrete reality on most specifics except for the possibility to change the 'rules' governing this artificial reality. In concrete reality this is not possible (it is not possible to change implicit rules buried in the concrete reality but this is possible in the artificial reality since all the rules governing this world are artificial and thus changeable).

Since this method mitigates research problems associated with the lack of understanding about the way subjects act as they do, the effects of certain inputs on subjects can be tested in an unimpaired 'clean' environment. The advantages of using theatrical simulation as a research method lies in the limited amount of time needed for a situation to be simulated, fifteen minutes instead of days or weeks, thus limiting the time needed to perform the research by 'thickening' the processes present. Also the enlargement of the effects is a result of using theatrical simulation as a research method. For example practical limitations such as missing material are not present and are constructed during the scene using mime. Finally the actors can be instructed to behave in a certain fashion, which is infeasible in concrete reality. In this way it is possible to induce a certain independent variable on a simulation, where this is impossible in concrete reality. (Wagenaar, 2008)

2.3 Theatrical improvisation

The research method developed by Wagenaar depends on the application of theatrical improvisation techniques. Theatrical improvisation, or improv, is the art in which theatre is made without using a script to guide the actors in the scene (Moshavi, 2001). The material used to make coherent scenes is usually based on suggestions made by the audience present, and also make the audience more involved in the scene compared to classic scripted theatre. So how does this work? The key to making a good improvised scene is the collaboration and team effort of the players in a process of co-creation (Vera et al., 2005, p 205). This involves a collective process of defining the specifics of a scene such as the environment, items, names, characters and problems. To construct a common environment each sentence of one of the participating actors is also an *offer* of something, for example by defining a certain item or making a suggestion; A: "Look at this purple chair" B: "Yes I can see it". It is the responsibility of the other actors to accept these suggestions and build the remainder of the scene upon them in order to be able to have a good process of improvisation. When an actor does not build upon ideas of others, the scene becomes stifled in a process known as *blocking*. Blocking prevents the scene from developing into new situations and is undesirable when the goal of the scene is to have a good process of improvisation. A good scene is dynamic, surprising and lets the actors develop a scene to its full potential by working together.

2.4 Judging creative processes

Since subjective opinion of judges was used to judge the scenes, this can lead to a bias in judgement because the definition of what is exactly a high-quality process or not is not uniform. Problems have risen when judging creative processes, such as improvisation, for a few decades. Examples of these problems are unintended and immeasurable variables (for example having a bad day) and unclarity about what exactly is 'good' or 'bad' examples of creativity. "Lack of a clear operational definition and appropriate research methodology" is what is missing and form the basis for this problem according to Amabile (Amabile, 1982). She acknowledges the problems associated with judging creativity, and has developed a research method specifically to deal with these problems. This method is called 'consensual assessment technique' (CAT) and relies on independent agreement of several judges to establish what is being judged and how. She establishes a consensual definition of creativity: 'A product or response is creative to the extent that appropriate observers independently agree it is creative'. Appropriate observers are those familiar with the domain in which the product was created or the response articulated. Thus, creativity (and improvisation) can be regarded as the quality of products or responses judged to be creative by appropriate observer, and it can also be regarded as the process by which something so judged is produced. (Amabile, 1982, p 1001)

2.5 Process quality in theatrical simulation, selecting source of indicators

In order to define what factors are of influence on the quality and incidence of organizational improvisation van Bilsen used the table (2.5a) below in his research about NPD-teams (Bilsen, 2010). The factors were catalogued using their source of emergence, and relative effect on the incidence and quality of improvisation is summarized. The theatrically simulated scenes used in van Bilsen's research are constructed in such a way that they stimulate an ideal environment for improvisation to take place, based on the environmental settings in the table below.

The improvisation process can be studied on different levels; a team and an organizational level (Bharadwaj et al., 2000; Magni et al., 2009). We are interested in the quality of the improvisation process in a group of actors, and thus limit ourselves to the team level approach of improvisation, marked yellow in the table below.

Group	Factor	Effect on incidence	Effect on quality
Environmental	Complexity (Ambiguity)	++	
	Turbulence (Uncertainty)	++	
	Time pressure (Urgency)	++	
Organizational	Experimental culture	++	++
	Minimal structure	++	++
	Memory	--	-/+
	Real-time information	-	++
Team	Team work	++	++
	Team stability	+	+
	Leadership style	+	++
	Diversity	?	+
Personal	Spontaneity	+	++
	Creativity	+	++
	Flexibility	+	++
	Intuition	+	++
	Training	+	++
	Expertise	-	++
	Experience	-	++

Table 2.5a: Factors by van Bilsen

Furthermore; the process of theatrical improvisation is structured in order for it to work and lead to a destination. Moshavi (2001) distinguishes external factors from internal factors in this regard. External factors are those who impose their influence from the outside to the improvisation theatre actors; examples are the environment, crowd and the assignment at hand. Internal factors are those who have an impact on the improvisation process between the actors, and emerge from the actors themselves. These factors consist of the rules which the actors must use between them, and are the same for every improv scene. This is important because external factors may be causing an improvisation process to have a certain quality; however they are no indicators of the quality of the process itself. The internal factors refer to the extent in which the actors work together and thus are related to the quality of the process.

So we are looking for indicators which are related to the team-level outlook on the improvisation process, and also on indicators which are directly related to the process which goes on between the actors.

2.6 Indicators of the improvisation process

The method of theatrical simulation works by applying *theatrical improvisation* in a research setting. *Organizational improvisation* and *theatrical improvisation* are no different in the way the process depends on certain environmental settings which make the process work. Also the process is visible in a similar way since they both work towards the same goal, facilitating improvisation. We examined several indicators in the team-level approach which are of influence on the quality of the process. These indicators have been taken from leading authors in the field of organizational improvisation, who seem to share these indicators as the most important factors in the improvisation process (Crossan et al., 1999; Crossan et al., 1996; M.J. Hatch, 1998; C. Moorman et al., 1998; Weick, 1998)

2.6.1 Refrain judgement of other's and own ideas during the process

In order for the improvisation process to function optimally team members must get rid of the fear of being judged. Taking a judgement into account during the process of improvisation is dangerous and stifles fundamentally new ideas while they are still being constructed. After all, how can a judgement (made on presuppositions on what is good or bad) say anything about the quality of a new idea? As Viola Spolin (1999) in her book about theatre techniques put it; "True personal freedom and self-expression can flower only in an atmosphere where attitudes permit equality between student and teacher and the dependencies of teacher for student and student for teacher are done away with". This necessity of refraining from judging other's ideas is shared by Karl Weick (1998) in his paper comparing Jazz to organizational improvisation practices. Participants should be "Open to reassembly of and departures from routines" in order for the process of improvisation to flourish.

Also, the practical application of this necessary rule of improv is similar to the process of brainstorming. Brainstorming and improvisation require a similar notion of the necessity of refraining judgment in order to achieve optimal results. The challenge in facilitating the process of improvisation as well as the brainstorming process is to let the actors feel safe to share their knowledge without fear of being judged, thus allowing them to build on the ideas of others and express new ideas fluidly to the group. When these characteristics of group dynamics are disregarded, the process becomes stifled and interrupted (Gerber, 2009). Gerber's research aims to find ways in order to facilitate the brainstorming process better. It is important however to note that theatrical improvisation process is similar to the brainstorming process in this necessity of removing judgment of new ideas, except where brainstorming is differentiated in phases the process of theatrical improvisation is not. The brainstorming process starts in general with a phase in which ideas are gathered and criticism between the participants is not allowed. In the second phase these ideas are judged and in the last phase an idea is chosen to be used. With theatrical improvisation the improvisation part makes these three phases converge, since the aim is to facilitate an optimal process in which judging can have no place. In order to keep the scene going and prevent *blocking*, the actors have to build on each other's ideas immediately and use the acceptance of other actors' offers in order to keep the scene flowing. This allows the improvisation process to be as good as it can get.

2.6.2 Active listening

For most of us listening is a passive activity, however research has shown that a more active way of listening, often called *sensitive listening* enables individual development and group change (Rogers et al., 1979). This changing effect of active listening is based on the idea that a subject is able to take in critique much better if this critique is presented without leaving the subject behind with the feeling of being under attack. The reason why it is often not possible to change a person's behaviour or attitude by means of persuasion is because a subject will reject negative ideas if he feels himself to be threatened by the discussion partner. This feeling effectively stifles communication and change. What is necessary is an environment which is not moralizing or critical by nature (Robertson, 2005).

The key in using active listening as a tool for change is the ability to let go natural personal drives to persuade the discussion partner to switch sides, instead listening with understanding of what the subject actually means leads to a more effective method of achieving change, since the subject says much more than just the words coming out of his mouth. Taking note of this and showing the subject actual attention is paid and all the information the subject is trying to convey is

noted allows for communication without doing anything more than listening. So, active listening is about *not* doing certain actions.

This is very useful when actors need to work together in a team in order to solve an objective. If the team members have a better understanding about each-other and spend time and effort on improving mutual understanding, personal boundaries are less prominent and concepts are more clearly articulated.

2.63 Thinking without criteria, being open to various interpretations

Critical thinking, keeping an open mind or being tolerant the notion of thinking without criteria is an important factor for being able to think without presuppositions and early judgment (M.J. Hatch, 1998). Difficult to capture in a definition; critical thinking is the practice of not using subjective judgement in the mind when deliberating concepts for usage. The difference lies in *not* thinking 'Do I like it?' but instead 'Is it useful for the goal?', or reflecting on the question itself. The disposal of personal judgement about ideas and concepts of others allows for a more creative and less presupposed way of thinking about the subject (or assignment) at hand. The result is a way of thinking which is working towards a goal, not looking at obstacles on the way but opportunities instead. Also when team members think in this way they work together better, since the goal they are trying to achieve is exactly the same, so every member wins (Facione, 1998).
Also it is important to note in which way of thinking without criteria fosters the process of improvisation. In an analogy with the art of playing Jazz music Hatch (1999) notes the importance of using a note played wrong by a fellow player in the orchestra for achieving the goal, instead of judging it to be wrong. These usages of all consequences of fellow players enables the best possible improvisation process because changing the context in an awkward situation during a jazz performance can save the day, and even lead to new ideas.

2.6.4 Shared contextual knowledge

The effectiveness of problem solving in a team depends on the context in which the problem is faced. When a team attempts to address a task or solve a problem they work together more effectively if they share contextual knowledge about the problem, the environment and expected interaction of each other (Vera et al., 2005). This shared environment allows team members in stressful situations to anticipate what other team members are going to do and how they will react in uncertain situations. The need for coordination gets lower when the team members share more contextual knowledge and can keep themselves occupied with solving the problem and thinking free about it. This time could have also been spent to foster the teamwork process or keeping other team members up to date about the problem solving or misunderstandings about the context or environment. Furthermore a high degree of shared knowledge allows for team members to assess effectively which information other team members need in order to solve the task at hand, making the process of teamwork even more flowing. This 'knowing what other team members need' also leads to less ambiguous ideas between team members about what the end product of the teamwork should look like (Cannon-Bowers et al., 1993). In this way the amount of shared contextual knowledge leads to less ambiguous goals and better mutual understanding fostering a fitting solution for any problem.

2.6.5 Build upon each other's ideas, Yes, anding

Perhaps the most important factor in improv theatre is visible in the practice of, 'Yes, anding' The process of accepting an *offer* in theatrical improvisation is visible by an actor saying: "Yes, and", and

this forms the most important rule in improvisational theatre . (Crossan, 1998) Accepting offers ("yes") and building upon them ("and") allows for developing the scene into more refined characters, and develops new situations (Ringstrom, 2001). This allows for room to improvise better, since actors can depend on each-other assuming any (new) idea will be picked up to extend the scene. Since improv contains no script, the practice of 'Yes, anding' is extended into every technique used in improvisational theatre. Most players in improv make use of *mime*, in order to define invisible props which usually are not available on stage. 'Yes, anding' implies the other actors respect these objects and this means it is not possible to walk through a table which has been defined by another actor. Furthermore 'Yes, anding' also implies the possibility to extend the mime-part of the scene, and this also has to be accepted by the other actors in the scene in order to make the improvisation work. For example; A: "Look at these beautiful flowers on the purple chair", B: "Yes, and I have also put water in the vase". This establishes for both actors there exists an imaginary chair, and there are flowers on top which sit in a vase filled with water. So usage of 'Yes, anding' in a scene makes the improvisational theatre work in its most fundamental way, and helps makes the process of improvisation better. The actors should feel at the end of the scene that everything possible was taken out of the scene and no individual actor feels his creativity and ideas were somehow limited (or blocked) by other actors. The end result should be at the optimum of what was possible, given the circumstances. This also implies the process can have a negative result, but a process of high quality, since the circumstances can be such that no good product could have ever come out of the scene (Moshavi, 2001).

'Yes, and' does not mean an actor has to switch towards the idea of the fellow actor, but is saying "Yes" (my idea) "and" (the other actor's idea), and taking this idea into the scene along with what was already established. This means there is a difference between just agreeing (Yes) and agreeing and taking the idea into the scene for further development. (Yes, and).

When the practice of 'Yes, anding' is not pursued in a theatrically improvised scene this is visible in one of the actors actively turning down an *offer* by a fellow actor, or at least ignoring the idea (and so not take it into the scene). This phenomenon, known as *blocking* hinders the flow of the scene and makes it necessary for the other actors to re-think and come up with a different idea. This is counterproductive to the process because it does not allow for building upon each other's ideas. The accumulation of ideas and situations is prevented and the actors have to start over again every time ideas are being blocked. Furthermore, since their ideas are blocked actors feel they cannot generate new ideas freely and when blocking is the norm fewer new ideas will be proposed, destroying the improvisation process along with it (Ringstrom, 2001).

2.7 Indicating the improvisation process

Our goal is to use indicator(s) of the improvisation process which are quantifiable of nature, since this makes the indicator usable in a more objective way in comparison to the intersubjective method. The indicator(s) should make the process of judging theatrically improvised scenes more transparent and objective, since the criteria which are being judged on are clearly formulated. This also allows for the judge to be a non-expert because the knowledge needed to judge a scene subjectively is not needed with a simple quantifiable indicator. Below a table is presented with the indicators specified in paragraph 2.5 and possible operationalizations. This information will be used to select an indicator of the improvisation process which has sufficient indicating power, but is also usable in a quantitative way.

Indicator	Behaviour by actor	(possible) operationalization to measure behaviour	Possible problem with operationalization
Refrain from judgement (2.5.1)	1. No judgment is presented of what other actors say. 2. Actors do not feel they should be afraid being judged. 3. Actors feel they are all on equal terms during the scene.	1. Degree to which actors judge other actors in the scene 2. Degree to which Actors hold back information and do not speak freely 3. Degree to which Actors participate unequally in the scene	1. Difficult to establish joke from judgment 2. Unable to measure because no external features 3. Unable to establish when an actor is participating and when not.
Active listening (2.5.2)	1. Show other actor real interest when listening. 2. Pay attention to more than the other actor is conveying by speech. 3. Make an effort to see the other actor's point of view.	1. Actors look at each other when in conversation 2. See if non-verbal information is taken into account. 3. Actor A clarifies information conveyed by actor B by asking further questions.	1. Scenes tend to be to chaotic to establish whether the actors pay attention to each other. 2. Non-verbal information is subjective, hard to measure objectively. 3. Hard to establish what reason is behind the questions asked.

Indicator	Behaviour by actor	(possible) operationalization	Possible problem with operationalization
Thinking without criteria (2.5.3)	1. Use team goal as own goal during the simulation. 2. Actively using obstacles as opportunities during the thinking process. 3. Correct mistakes by other actors during the scene without destroying the process.	1. Watch for conflicting goals during the simulation. 2. Turning problems posed by other actors into new ideas and opportunities. 3. Use mistakes made by other actors in order to complete the assignment.	1. Conflict might not always externalize, if an actor makes a judgement in his head, we will not know. 2. Sometimes difficult when a 'problem' actually is a problem or an opportunity. 3. Mistakes are sometimes only identified by the actors themselves.
Shared contextual knowledge (2.5.4)	1. Communication is not effective because of other interpretation of problem. 2. Actors anticipate on what other actors are going to do. 3. Assessment of what information other actors need.	1. Actors ask clarifying questions about the context and environment in the scene. 2. Actors take actions helping each-other without prior coordination. 3. Actors provide information to fellow actors without being asked for.	1. Sometimes boundary between context and problem is vague. 2. Relationship between anticipation and helping each-other not verifiable because not external. 3. -
Yes, anding (2.5.5)	1. Agrees with ideas of other actors without judging the idea first. 2. Takes ideas of other actors into the scene and builds upon them. 3. Does not block ideas of other actors by dismissing them.	• Actor saying "Yes", or something equivalent, to an idea made by another actor. • Actor saying "Yes, and", or something equivalent, to an idea made by another actor. • Actor dismissing an idea made by another actor, by saying "No", or something equivalent.	1. Definition of agreement might be unclear (linked to "and" 2. - 3. Sometimes difference between "No" and ignoring is unclear because problem can be in communication or disapproval of the idea.

Table 2.7a: Limitations of operationalization from organizational improvisation indicators

The limits of these indicators are of such a nature that they are not all usable in a quantitative way, because of the limitations shown in the table above. The practice of ‘Yes, anding’ however is interesting to use as an indicator because at first glance there seems to be no problem in looking into a scene and count the number of ‘Yes, and’ situations taking place. Also the practice of ‘Yes, anding’ entails some qualities of the first indicators described. It is logical to assume the necessity of a refrainment of judgment in order to take an idea from another actor into the scene. The same goes for the other indicators, they can be seen as qualities an actor must possess in order for the practice of ‘Yes, anding’ to take place. This is an interesting fact to notice because a combination of usability and reflectivity of the problem are the characteristics our indicator should conform to.

3. Designing a method to verify indicators

In theory multiple indicators have been established which show to have a relationship with organizational improvisation. We have also established that the usage of 'Yes, anding' forms the most basic element that makes improvisational theatre work. Since the method of theatrical *simulation* is based on the application of theatrical *improvisation* it makes sense to stipulate a relationship between the degree of 'Yes, anding', and the quality of the improvisation process. The process of 'Yes, anding' is not only related to the notion of building on each other's ideas as an indicator but also contains parts of the refrainment of judgment indicator (by always agreeing with fellow actors) and enabling the possibilities posed by other actors (thinking without criteria). As mentioned before the other indicators defined can be seen as a basis on which 'Yes, anding' can perform well. Finally this indicator is also quantifiable, in the possibility to count the number of times actors show they 'Yes, and' (agree with, and build upon each-other) in a certain timeframe.

Thus the practice 'Yes, anding' contains parts of the other defined indicators, but is also measurable in a quantitative way. Below we will elaborate our method to test the indicators performance; this data will be used to estimate the usability, validity and reliability of the chosen indicator.

Since no method for establishing the quality of improvisation process in theatrically improvised scenes exists in current literature we do not have the possession of a perfect method of establishing the process quality. Therefore we have to establish or decide upon a reference point ourselves to which we will compare the performance of the chosen indicator to. As mentioned before, the research performed by van Bilsen uses a judgment method in which two judges have rated theatrically improvised scenes on their improvisation process quality using a 5-point scale. The judgment made by the experts for the process quality will be used as our reference point, so we will be able to make a statement about the performance of 'Yes, anding' as an objective indicator for the improvisation process.

The practice of 'Yes, anding' has been described above as an indicator which should occur more when the judges' rating of the scene increases. Apart from 'Yes, anding', a similar process takes place which is known as 'blocking'. Where 'Yes, anding' allows for extending the scene, blocking hinders this extending process because other actors deliberately not take over *offers* made by their fellow actors. This *blocking* should occur more when the judges' rating of the scene is lower. We will therefore compare the occurrence of 'Yes, anding' as well as 'blocking' in order to compare the performance of these indicators to the experts' rating.

In the research model below we will explain the method used in order to provide data for verification of the presumptions made above.

3.1 The research model

Below we will explain how the research is going to be performed and what the research dataset consists of, how this data is going to be treated, how we are going to measure the reliability of the treatment and the validity of the indicator for measuring the improvisation process quality.

3.1.1 Dataset

The dataset consists of theatrical simulations of new product development teams. These were produced for earlier research performed on the effect of leadership styles on simulated NPD-teams. The simulated teams consist of improvisation actors with specific instructions to which leadership

style to use. They must then complete an assignment designed to invoke the usage of organizational improvisation (Bilsen, 2010). The NPD-teams were simulated using the method of theatrical simulation (Wagenaar, 2008), and afterwards the quality of the fictional end product was assessed along with the quality of the improvisation process by a team of experts.

This dataset consists of a total of thirty scenes between 10 and 30 minutes in length. Of the 30 scenes, 12 were used in the original research by van Bilsen, and 18 scenes have been recorded afterwards for future use and in order to have an extended dataset of scenes.

3.1.2 First treatment

We will count the number of times 'Yes, and' is being said, as well as the number of 'blocks' in every scene. This is to be interpreted to the extent that an actor clearly responds to an *offer* with showing he agrees and builds upon the idea, or blocks it. When the 'Yes'-part of the 'Yes, anding' process takes place, but the 'and' part does not take place it will not be counted because this is not allowed in the practice of 'Yes, anding'. In order to be able to compare scenes' performance to each other, this judgement will be made relative to time, since it is logical to assume that scenes which are longer leave more room for the number of 'Yes, ands' or blocks. The selection criterion is thus defined as the average number of times 'Yes, anding' and 'blocking' takes place per minute of the scene.

3.1.3 Reliability

After the author of this thesis has counted the thirty scenes a small reliability check will be performed. A small selection of the scenes will then be counted on the number of 'Yes, ands' and 'blocks' by two external volunteers in order to be able to make a preliminary judgment about the reliability of the counting method used. This reliability check is very important because this provides a first indication about whether the counting method for the occurrence of 'Yes, anding' as well as 'blocking' can be made objective (and therefore reliable). This reliability is visible in the method being applicable by other judges in the same way as the author of this thesis. If the reliability of the counting method is insufficient, we will first extend the method and criteria for counting the scenes in order to achieve sufficient reliability. After the final method has been decided upon, a final assessment of the reliability of the method will be presented.

For the final method four scenes will be selected to be rated by four independent volunteers, in order not to ask too much time of them. In this selection one scene has a high score, one a low score and two an average score on both indicators, selected by the most reliable method for counting the scenes. The volunteers will be presented with a short manual containing a description of what 'Yes, anding' and blocking entails and how to count it. This 'final version' manual is presented in attachment B (Dutch). The scenes will be presented in a sequence so an average scoring scene precedes a non-average scoring scene, in order to minimize the risk of biased judgement because of judgements of one scene influencing another scene.

3.1.4 Validity

We want to make a statement about the presumed relation between the occurrence 'Yes, anding', and the quality of the improvisation process as subjectively measured before. Also we want to make a statement about the presumed negative correlation between 'blocking' and the quality of the improvisation process as subjectively measured before. Therefore we will select the twelve scenes judged earlier by experts in van Bilsens' research and compare the subjective scores assigned to the

scenes with the number of Yes, ands per minute, and blocking per minute in the scene. In comparing the twelve ordinal rated values and quantitative measurements taken ourselves we will be able to say something about the degree to which the quantitative method approaches the subjective rating given before.

3.2 Drawing conclusions

After both sets of research data have been generated we can compare the two methods of selecting scenes and draw conclusions about the predictive power of the 'Yes, and' and 'blocking' indicators for the quality of the improvisation process. The method used for drawing these conclusions will consist of graphic representations of the data, because the number of participants and rated scenes do not allow for proper statistic testing procedures. A method for using statistics to interpret the results has been developed and is discussed in chapter six.

4. Application of the method

The research model described in chapter three was applied and the results are presented below.

4.1 Results of counting scenes

The 30 scenes were counted on the occurrence of 'Yes, anding' as well as blocking. The full results including raw data are presented in attachment A, and a summary of the results is presented below in table 4.1a. The results below '#Yes, and per minute' have been corrected for the length of the scenes, and show the occurrence per minute of the scene.

Scene number	Session number (Gijs)	Assignment	Leadership style	Td-value (=Td-body - Td-feedback) (H:M:S)	# Yes, and per minute	# Yes, and	# Block	
1	1,1	Toy	Dir	0:12:14	0,08	1	1	Second lowest
2	1,2	Jewel	Dir	0:11:37	0,26	3	1	
3	2,1	Throne	Ser	0:15:30	0,58	9		
4	2,2	Defense	Ser	0:09:31	0,74	7	1	
5	2,3	Buffet	Ser	0:11:22	1,14	13	2	
6	3,1	Sewage	Rot	0:09:21	1,93	18		Highest
7	3,2	Armor	Rot	0:10:39	1,41	15	3	Third highest
8	4,1	Armor	Rot	0:16:36	1,45	24	1	Second highest
9	4,2	Transport	Rot	0:12:16	1,14	14	2	
10	5,1	Toy	Dir	0:14:41	0,61	9	3	
11	5,2	Jewel	Dir	0:08:42	0,23	2	2	
12	5,3	Hat	Dir	0:05:39	1,24	7	3	
13	6,1	Throne	Ser	0:14:20	0,07	1	2	Lowest
14	6,2	Defense	Ser	0:11:45	1,02	12	2	
15	6,3	Tent	Ser	0:09:03	0,77	7		Second nearest to average
16	7,1	Armor	Rot	0:16:03	1,18	19	1	
17	7,2	Transport	Rot	-	-	-	-	Scene incomplete
18	8,1	Toy	Dir	0:17:06	0,12	2		Third lowest
19	8,2	Jewel	Dir	0:05:48	1,38	8	1	
20	9,1	Throne	Ser	0:17:59	1,22	22	1	
21	9,2	Defense	Ser	0:17:33	0,74	13	1	
22	10,1	Armor	Rot	0:18:38	0,64	12	1	
23	10,2	Transport	Rot	0:23:08	0,86	20	4	Nearest to average
24	11,1	Jewel	Dir	0:14:40	1,30	19	1	
25				-	-	-	-	Scene missing
26	12,1	Throne	Ser	0:16:57	0,59	10		
27	12,2	Defense	Ser	0:10:34	0,47	5		Scene incomplete
28	13,1	Armor	Rot	0:12:22	1,29	16	2	
29	13,2	Transport	Rot	-	-	-	-	Scene incomplete
30	13,3	Toy	Dir	0:08:54	1,01	9		Second nearest to average
	Td=time T=time	duration point		Average	0,89			

Table 4.1a: results of counting 'Yes, and' and blocking.

The scenes were counted using a broad but consequent definition of the concepts of 'Yes, anding' and 'blocking' by the author. This means a 'Yes, and' or 'blocking'-moment is counted whenever it fits to the criterion of being an idea which is suggested by actor A and used by actor B. Of course for a 'blocking'-moment the idea should be turned down by actor B in order to be counted.

Examples of moments which were counted are:

- Actor A actively proposes a new idea for improving the product, and actor B extends the scene using this idea.
    - A: "We should make it purple" B: "Yes, and we can use the special paint"
- Actors behaving in such a manner this is usable to extend the scene and this happens
    - A: Shows he is manipulating a product by moving his hands. B: "Maybe you could also add the purple paint"
- Actors proposing to change the scene by letting other actors have special roles and this allows for extending the scene
    - A: "You are the painting expert right?" B: "Yes, and I also just finished my education as a forger"

Of the thirty scenes four scenes were not provided with a rating because the film material was incomplete or missing in the dataset. This meant the scenes were not viewable through their whole length. Also the highest and lowest rating scenes were left out of the selection process to prevent peaks from influencing the selection process.

The ratings provided with the number of 'Yes, ands' show to have a high variety and range from 0,08 per minute to 1,93 per minute. The numbers of active blocking actions have a low variety and range from 0 the entire scene towards 4 in a scene. This is problematic because this makes them unusable for drawing any conclusion because of lack of variance in the results. We decided to leave out the number of blocking actions for the reliability check because they would not be comparable to the original number of blocking actions counted.

4.2 Reliability check

In order to be able to make a statement about the reliability of counting the number of 'Yes, ands' in a certain scene, a selection of four scenes was also counted by two external volunteers.

The volunteers; who had no information and experience with theatre, theatrical simulation, the concepts used and aims of the research; were presented with four scenes and a manual explaining what 'Yes, anding' entails and how to count it. This manual was a written down representation of the method used by the author to rate the scenes as listed in chapter 4.1. The counting was done without the author being present when the scene was playing and being counted.

The presented manual is attached as attachment B (Dutch). The scenes were selected based upon the original counting by the author, and consist of one bad performing scene, two average performing scenes and one excellent performing scene of the first nineteen scenes counted. This selection was made in the first 19 scenes because of planning reasons, the eleven remaining scenes still had to be counted when the volunteers were available. The best performing scene and worst performing scene were left out of this first nineteen scenes to prevent single unusual scenes from being judged by the volunteer. The sequence of these scenes was presented such that the excellent

and bad scenes were always preceded by an average performing scene. This sequence levels the mood of the volunteer while moving to the next scene.

The results are presented below:

Scene	Original count (# of Yes, ands)	Observer 1 (# of Yes, ands)	Observer 2 (# of Yes, ands)
15	7	18	6
1	1	10	4
4	7	32	12
8	24	58	29

The preliminary reliability check shows the existence of a large bias in judgment, even when using an objective description of the items which should be counted in a scene. In order to improve the reliability of the judgment procedure we decided to start a iterative process in which volunteers were asked to write down then they had serious doubts about whether a possible 'Yes, and'-moment was supposed to be counted or not. This process is described in chapter 5.

4.3 Improving reliability

The results of the preliminary reliability check lead us to develop a new manual and even a flowchart to guide judges in the way they should judge the scenes.

After reviewing the preliminary results of the reliability check we had a conversation with both judges in order to establish what made them doubt and what they were sure of. This information was used to narrow down the definition of when a 'Yes, and' situation should be counted and when it should be omitted. After this starting point we started an iterative process in order to eliminate as much of the doubt as possible for the judges. The problems which were defined in the iterative improvement process were the primary source of information about what to narrow down. After 3 iterations based on the judgment of one scene by different judges the results with a single scene converged to an average of 17 'Yes, and'-moments in the entire scene and four judges eventually rated it at 15, 17, 18 and 19 'Yes, and'-moments in the entire scene.

The main doubt points as defined by the voluntary judges are:

- General unclarities about when a 'Yes, and'-situation was in fact such a situation. It is unclear what the definition is of something being added to the scene or when a situation can be defined as 'new'.
    - This was resolved by allowing only product-related 'Yes, and'-situations to be counted. Since the product is relatively easy to imagine this takes out a large portion of judgment bias.
- Unclarities about mimed situations, these situations are very sensitive with regard to interpretation.
    - This was resolved by only allowing spoken 'Yes, and' situations in the scene, we therefore had to assume the difference in process quality within the scene would still be measurable without these mimed situations being counted.
- Sometimes actors would present something as a 'Yes, and'-situation in a scene, but the idea was proposed before, leading to lack of clarity in the counting process.

- We solved this by changing the counting method in such a way that the judges write down what is introduced in the scene at what point, so when doubt arises they can easily see if they have counted it before.

The new version of the manual (Dutch) and counting lists are added in attachment D, the flowchart (Dutch) in attachment E.

After de final version of the manual was developed we again asked four volunteers who did not participate in any part of the research before to judge four selected scenes on the quality of the improvisation process. These four judges were first instructed by the author by making use of an example scene to discuss what to do when in doubt about when to count or ignore a 'Yes, and-situation'. After this session the judges individually rated four scenes based upon the revised manual and flowchart. The author was not present with the judges during the rating of the scenes.

The movies were selected on their quality in judgment by the author in order to cover movies with all qualities. The end results are presented in table 4.3a:

	Original count (# of Yes, ands)	Judge 1	Judge 2	Judge 3	Judge 4	Percentage agreement reliability
Scene 1 (average)	7	6	12	11	5	58%
Scene 2 (good)	11	10	20	10	12	55%
Scene 3 (average)	7	7	12	11	9	58%
Scene 4 (bad)	2	2	2	3	2	66%

Table 4.3a: Scores by judges based on new instructions.

The reliability test is primarily incorporated to be able to state the reliability across raters (judges), since if the rating method reliability is perfect, all the raters would end up providing the exact same rating. In practice however, especially with judging items which are susceptible to interpretation, individual judges to dot agree perfectly. The percentage reliability in the table was calculated by dividing the smallest rating by the largest rating in order to provide a rough estimate of their agreement. This simple method does not take into account the number of judges and chance agreement but is sufficient in our case to give an estimation of the reliability of the rating method used. A general rule of thumb is they should agree about 80% in order to consider the reliability acceptable. (de Vet et al., 2006; Hartmann, 1977)

We note the reliability has improved but is still not at our desired level of about 80%. The data does show some interesting characteristics. These will be addressed in paragraph 4.5.

4.4 Re-counting of the scenes based upon new method

Because the scenes in paragraph 4.1 were counted by the author based upon the original counting method, the change of the method for improving the reliability also necessitates the re-counting of all these scenes. The results of this second objective quantitative counting are presented below.

Since we narrowed down our instructions for when a 'Yes, and-moment' is allowed to be counted and when it should be ignored this leads to a generally lower number of 'Yes, ands' throughout the

entire dataset. This might reduce the statistical power of validity of the supposed relation between the subjective judgment method and the newly designed objective method but should improve the reliability because of the more narrow definitions used. This possible reduction in the validity is caused by tailoring “Yes, anding” to include less in the judgment procedure when compared to its theoretical description. It might for example be the case most of the “Yes, anding”-moments take place with regard to the conditions of the scene or are made through the usage of mime. Deliberately not including this can lead to a judgment bias when compared to the earlier subjective judgment in which the judges did take this into account, they are to some extent judging a different construct because of the tailored concept of ‘Yes, anding’.

We also note some scenes were left out and others added because of their lack of use for the original research done by van Bilsen. After a meeting with him, we decided to edit the list in order for it to use the scenes which have been most conforming to the original research performed by van Bilsen.

We only use 12 out of a total of 30 scenes for the conclusion about the validity of the research, because of them already being rated before by the judges used by van Bilsen. These twelve scenes were all rated using the old and new method of judging in order to make their rating comparable to each other. These scenes are the scenes which are labeled scene number 1 through 12 in table 4.4a below. The session numbers correspond to the original table (4.1a) for the session 1.x through 10.x.

Scene number	Session number	Assignment	Leadership style	Td-value (=Td-body - Td-feedback) (H:M:S)	# Yes, and per minute	# Yes, and	
1	1,1	Toy	Dir	0:12:14	0,16	2	Third lowest
2	1,2	Jewel	Dir	0:11:37	0,26	3	
3	2,1	Throne	Ser	0:15:30	0,71	11	
4	2,2	Defense	Ser	0:09:31	1,26	12	Second highest
5	3,1	Sewage	Rot	0:09:21	1,39	13	Highest
6	3,2	Armor	Rot	0:10:39	1,22	13	Third highest
7	4,1	Armor	Rot	0:16:36	0,54	9	Average
8	4,2	Transport	Rot	0:12:16	0,90	11	
9	5,1	Toy	Dir	0:14:41	0,41	6	
10	5,2	Jewel	Dir	0:08:42	0,23	2	
11	6,1	Throne	Ser	0:14:20	0,07	1	
12	6,2	Defense	Ser	0:11:45	0,34	4	
13	7,1	Armor	Rot	0:16:03	0,69	11	
14	7,2	Transport	Rot	-	-	-	Incomplete
15	8,1	Toy	Dir	0:17:06	0,18	3	
16	8,2	Jewel	Dir	0:14:48	0,14	2	Second lowest
17	9,1	Throne	Ser	0:17:59	0,28	5	
18	9,2	Defense	Ser	0:17:33	0,11	2	Lowest
19	10,1	Armor	Rot	0:18:38	0,38	7	
20	10,2	Transport	Rot	0:23:08	0,35	8	
21	11,1	Toy	Dir	0:24:40	0,24	6	
22	11,2	Jewel	Dir	0:17:09	0,58	10	Third average
23	12,1	Throne	Ser	0:18:05	0,66	12	
24	12,2	Defense	Ser	0:16:27	0,61	10	
25	13,1	Jewel	Dir	0:14:40	0,95	14	
26	13,2	?	Dir	-	-	-	Missing
27	14,1	Throne	Ser	0:16:55	0,53	9	Second average
28	14,2	Defense	Ser	-	-	-	Incomplete
29	51,1	Armor	Rot	0:13:46	1,16	16	
30	15,2	Transport	Rot	-	-	-	Incomplete
				Average	0,54		

Table 4.4a: Revised judgment of number of 'Yes, and'-moments based upon new method.

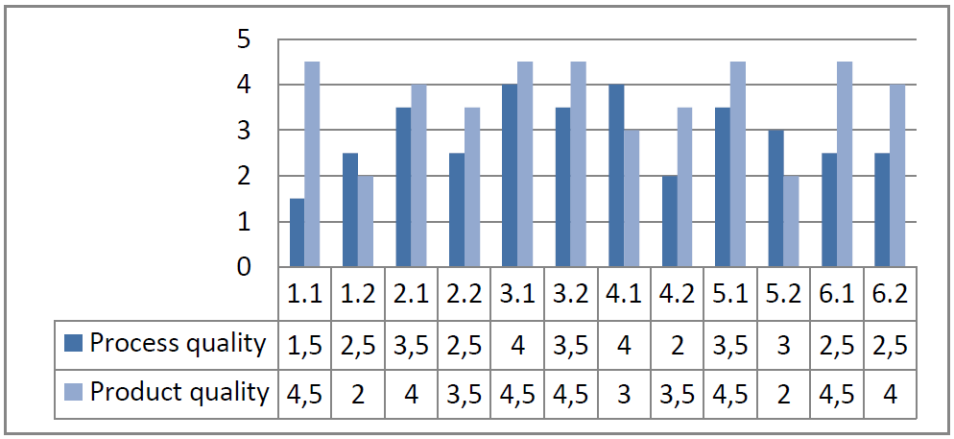
First indication shows the lower average of 'Yes, and'-moments in the entire range, probably because of the more strict definition of when a moment is, and is not, allowed to be counted. This will be discussed in paragraph 4.5.

4.5 Interpretation of the results

Below we will discuss the results of the data collected and use graphic representations in order to interpret the meaning of the results.

4.5.1 Validity

The goal of our research is to develop a method to measure the process of improvisation in a more objective way, while still reaching the same results when compared to the subjective method used by van Bilsen in his research. First we present the results as presented by van Bilsen in graph 4.5.1a.



Graph 4.5.1a: Results of earlier subjective judgment.

For this research we are only interested in the ratings provided for the process quality in the table above. Also the tables used before contain thirty scenes which were rated. In this paragraph we are only going to use the first twelve because these are the only scenes of which we also have prior subjective judgments.

The results of our original and revised method of counting the number of 'Yes, and'-moments is presented below. Also the data for the subjective method is included in table 4.5.1a.

Session number (scene 1-12)	#Yes, and per minute (method 1)	Subjective rating
1.1	.16	1,5
1.2	.26	2,5
2.1	.71	3,5
2.2	1.26	2,5
3.1	1.39	4
3.2	1.22	3,5
4.1	.54	4
4.2	.90	2
5.1	.41	3,5
5.2	.23	3
6.1	.07	2,5
6.2	.34	2,5

Table 4.5.1a: Results of counting 'Yes, and'-moments

Since our data does not contain enough points of measurement to apply regular statistics, we will use a simple method for providing an initial estimate of the validity between the subjective method

and our method. We will group the results of both methods in three categories of scenes: high scoring, average scoring and low scoring scenes. Because the subjective method used delivers results which often lead to a problem of placing them in a certain category, only two ratings are provided per category because in this way no arbitrary selection has to be made to place certain scenes in a category. Because four scenes scored average at 2.5, all four of them are mentioned in the average box. After this grouping is complete we can estimate the extent to which the different methods deliver comparable results.

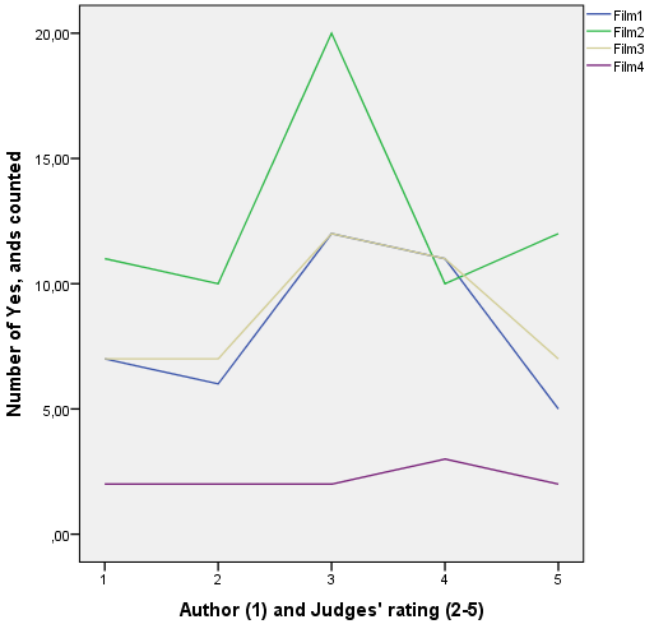
Category	#Yes, and per minute, scene number, descending	Subjective rating, scene number, descending
High	3.1 2.2 3.2 4.2	3.1 & 4.1
Average	2.1 4.1 5.1 6.2	1.2, 2.2, 6.1, 6.2
Low	1.2 5.2 1.1 6.1	1.1 & 4.2

Table 4.5.1b: Results of grouping

When we take the data in table 4.5.1b we immediately note the two methods of rating deliver very different results. In each category only one pair matches and the other does not match at all. Especially when taking the average values of the subjective method into account (which are all the same) the methods do not deliver results which are similar to each other.

4.5.2 Reliability

Below a graphic representation of the judging results is presented. We note our method was designed to deliver an objective judgment, independent of the deciding judge. This means the lines in the table below would have been flat (showing the judges have the same opinion) if the four raters and the author would be in perfect agreement. As visible in the graph the lines are clearly not flat and therefore indicate an insufficient level of reliability in our method.



Graph 4.5.2a: Reliability indication

Our preliminary reliability check (paragraph 4.2) necessitated a more elaborate attempt to improve the reliability of the method and a more detailed attempt (paragraph 4.3) to solve the specific reasons for the poor results. We started the improvement by using an iterative process in which successively different judges, which were not earlier involved in the research, judged the same example scene over and over for three times. Between these judgments we discussed the problems which had risen during the process of judging. Problems were to be found in lack of clarity about the operating definition and too much situations in which interpretation of the definition of 'Yes, anding' allowed for different opinions.

We attempted to solve these problems by:

- Improving the practical use of the method by using a revised manual (attachment D) and flowchart (attachment E) instead of just a written manual (attachment B, Dutch) to aid the judges in reaching consistent judgment.
- Having an instruction session with the four judges before they were asked to give their verdict using the final version of the method. In this session the judges were presented with the problems which occurred before with application of earlier versions of the method. This was discussed using the example scene to show situations of doubt and explain what to do using the flowchart and manual.
- Narrowing the definition of what is allowed to be counted as a 'Yes, and'-moment. These restrictions consist of the moment having to be related to the product at hand, and mime and earlier 'Yes, and'-moments are explicitly not allowed to be counted anymore

Despite these efforts we were unable to let the judges reach consistent judgment, as can be seen in the graph.

In chapter five an overall conclusion will be drawn.

5. Conclusions

The main research question is:

'Which indicator(s) of the theatrically simulated improvisation process can be used to judge the quality of this improvisation process?'

In order to answer this question we first we answer the questions which lead up to the main research question:

1. *Which of the indicators found in literature is suitable for use in a measurement method which judges the quality of the improvisation process?*

We described five possible indicators and decided to use just one of these indicators in order to provide a quantitative measurement method for deriving the quality of a theatrically simulated scene. The main reason for using just this indicator, and its properties, instead of other indicators was the possibility for operationalization and the fact this indicator more or less presupposes the usage of the other indicators.

The other four indicators described all had some sort of potential operationalization problem. It is for example not possible to accurately measure what is going on in the head of an actor, if the possibility for simply asking the actor is taken away. This however does not mean these indicators are less representative of the improvisation quality, but we cannot make a judgment about it. We therefore would say the usage of 'Yes, anding' as an indicator for the quality of the improvisation process is viable, but attempts might be made in the future to also measure the other indicators described and make the possible relationships between them visible.

2. *How does the chosen indicator(s) perform on indicating the quality of the improvisation process when compared to a subjective judgement made by experts?*

We used a simple grouped ranking to make a judgment about the performance of our indicator. We can say the objective reliability is quite disappointing, because the judgements between the independent judges vary a lot, despite of the efforts made to objectify the judgment criteria.

We do however note the strong internal consistency (based upon a comparison of four cases) of the judges' rating. This means that a certain judge who judges four scenes can use the quantitative method in order to derive which scene is better in comparison to other scenes, without making a direct comparison to another scene. This allows for objective comparison between the scenes and when a method would be developed to calibrate the measurements made by the judge this new insight is interesting and provides possibility for future research in order to provide a quantitatively viable method to judge scenes in an objective fashion.

Based upon the grouped ranking given in chapter 4.5.1 we can say the similarity between our method and the subjective rating is insufficient to say they deliver similar results. The ranking shows only half of the subjective judgments represents the objective judgment method. This however does not say anything about the quality of the improvisation process itself, it merely says the objective and subjective methods deliver results which are dissimilar.

The main research question is therefore inconclusive, it might be possible to use Yes, anding as an indicator for the quality of the improvisation process, but this judgment is only possible based upon differences between judges and their consistent personal bias. This makes the comparison of scenes judged by judge A incomparable to scenes judged by judge B without changing the method fundamentally.

6. Discussion & Further research

In this thesis an attempt was made to make judges' rating of a vague construct similar to each other. The scientific value of the end results is to be found in the fact there is now a list of possible indicators to use for measuring the quality of the improvisation process. This list of indicators can be easily converted into a questionnaire to ask to the actors themselves in future scenes, which have yet to be recorded for different research purposes. Also the reliability results show it is relatively easy to make a judge consistent in rating a scene based on a set of criteria. This opens up a lot of possibilities for developing a different, but still more objective in comparison to just using theatre experts, method for measuring the quality of the process.

6.1 Discussion and suggestions

The most important step for a future researcher to take is to establish a reference point which is reliable to use as a calibration tool for different methods to measure the improvisation quality. For example a certain calibration set of scenes might be used in order to derive the bias of a new judge. When this bias is clear this might be used to normalize the results of a new judge in order to make it comparable to other judges' rating of the same scene. This would enable an objective comparison between different theatrically simulated scenes.

Furthermore the concept of 'Yes, anding' is clearly described in literature and linked to process quality of improvisation, still it is difficult to let a heterogeneous group of people interpret the occurrence of 'Yes, anding' in the same way. A small list of problems associated with the difficulty in deciding whether a 'Yes, and'-moment should or should not be counted is presented here; also possible solutions are presented:

- When actor A instructs or asks actor B to do something, this actor has in practice no choice but to comply. This situation can be very similar to a 'Yes, and-situation'.
    - Leave out these situations when counting them, or if actor A says something to B, and actor A expects a certain action of actor B, do not count it as a 'Yes, and'-moment.
- Actors often ask each other for their opinion, this more or less leads to the same problem as above, since an actor is 'invited' to 'Yes, and'.
    - Ignore questions asked by actors to each other in the process of rating the scenes.
- Yes, anding to own ideas; this happens quite often and it is difficult to decide when it is a moment of 'Yes, anding' or when this is related to just a strain of thought.
    - Leave out moments of 'Yes, anding' made by the actors themselves.

As noticeable above in the small list a lot of the problems associated with the ambiguity are solvable by simply leaving them out of the judgment. Problematic however is this procedure lowers the number of counted 'Yes, and-moments' in a scene which has a negative influence on the validity of the research because the scenes become less different form each other in their rating. This might be solved by using a combination of indicators for rating the scenes of they were to be judged in a quantitative fashion. Also a questionnaire might be used in which the actors themselves answer questions about the openness of other actors, possibility to try new ideas and other related questions. This is of course only possible after the scene has just been played, since the subtle qualities of a scene vanish quickly over time.

Theatrical improvisation processes are of such a nature they are hard to grasp in a structured method. The construct is different for every one of us and this makes it hard to devise a method in which the quality of this process is measured in a reliable and valid way.

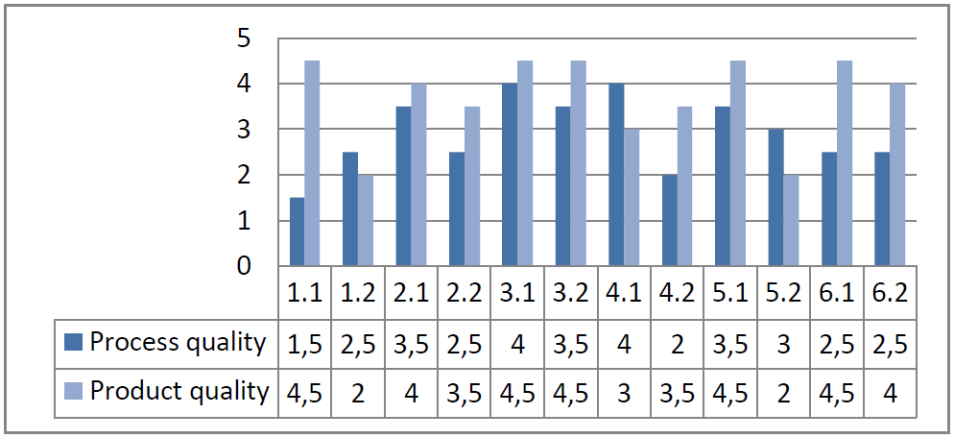
I would urge future research in this topic to focus on the problematic relation between the construct of theatrical improvisation processes and methods to measure the quality of this construct. At the moment two methods have been put into practice towards this end, a subjective method and an objective and quantified attempt in this thesis. There is however no method which is proven accurate at describing the quality of the improvisation process.

Probably the best results for measuring the quality of the improvisation process can be derived by simply asking the actors themselves, because they can take into account all the indicators described in the theoretical framework in chapter two and also take into account a more subjective impression of the quality of the improvisation process. It would be very interesting to let actors play scenes with exactly the same assignments as used before, however now they would be asked to rate the quality of the process in the scene by making use of the indicators described in chapter two. It is possible this can be used as the reference point which we can use to develop the earlier methods upon.

6.2 Using statistics to analyze validity in future research data

The size of our generated dataset is insufficient for applying statistics in order to draw a conclusion. We do however present two methods of applying statistics below, for future reference.

We start with the data for the twelve scenes mentioned earlier. These scenes were rated in a subjective manner before in research performed by van Bilsen. These results are presented below:



	1.1	1.2	2.1	2.2	3.1	3.2	4.1	4.2	5.1	5.2	6.1	6.2
Process quality	1,5	2,5	3,5	2,5	4	3,5	4	2	3,5	3	2,5	2,5
Product quality	4,5	2	4	3,5	4,5	4,5	3	3,5	4,5	2	4,5	4

Graph 4.5.1a: Results of subjective judgment by judges used in van Bilsens' research.

The original data from which the table above is constructed uses two judges who rate the scenes on the product as well as the process quality of improvisation. The values shown in graph 4.5.1a are the averages of two judges. Since we are only looking at the process quality the 'Process quality' row of the graph should be used for comparing with the average number of 'Yes, and'-moments of the same scenes, which could be counted using a future method.

Two methods are shown below for applying statistics to compare the subjective (above) and objective (future) data to each other.

The data for the number of 'Yes, and'-moments could be generated using a future method of counting or judging the process quality of the scenes. In order to be able to say something about the correlation between the subjective data, and the objective data it is possible to calculate Pearson's R. Pearson's R states the degree to which data correlates to each other and is useful for comparing two different methods for measuring the same construct. If the correlation is high, the two methods perform similar. This however does not imply the methods are both measuring the intended construct, and therefore Pearson's R cannot be used for this purpose.

Since Pearson's R assumes a normal distribution of the values presented and this normal distribution requires a value of N to be near 40 or above as a rule of thumb, it might me considered to use non-parametrical statistics which do not assume a normal distribution of data to derive the degree of correlation. Spearman's rho can be used for this purpose.

6.3 Using statistics to analyze reliability in future research data

In order to be able to provide a statement regarding the reliability of judgment first a simple graph can be drawn showing the scenes judged on the x-axis; and the judgments (yes, and moments or another judgment value) on the y-axis. A line can be drawn between the points where x and y meet. When the judges are consistent in their judgment the line should be perfectly horizontal; because every judge judges the scenes exactly the same. After this first simple representation Cronbach's alpha can be used to derive the internal consistency between the judges in a more quantitative approach. If the judges judge the same scene in a similar way, they presumably judge on the same criterion and are therefore consistent in their judgment. Cronbach's alpha is a numerical representation (ranging from 0 to 1) of the degree to which the judges are consistent in their judgment. If the value approaches 1, the judges agree perfectly and if the value is 0 they disagree to a large extent.

Reference list

Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology, 43*(5), 997-1013. doi: 10.1037/0022-3514.43.5.997

Baker, T., & Nelson, R. E. (2005). Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage. *Administrative Science Quarterly, 50*(3), 329-366. doi: 10.2189/asqu.2005.50.3.329

Barrett, F. J. (1998a). Coda—Creativity and Improvisation in Jazz and Organizations: Implications for Organizational Learning. *Organization Science, 9*(5), 605-622. doi: 10.1287/orsc.9.5.605

Barrett, F. J. (1998b). Coda: Creativity and Improvisation in Jazz and Organizations: Implications for Organizational Learning. *Organization Science, 9*(5), 605-622.

Bastien, D. T., & Hostager, T. J. (1988). Jazz as a Process of Organizational Innovation. *Communication Research, 15*(5), 582-602. doi: 10.1177/009365088015005005

Bettis, R. A., & Hitt, M. A. (1995). The new competitive landscape. *Strategic management journal, 16*(S1), 7-19.

Bharadwaj, S., & Menon, A. (2000). Making Innovation Happen in Organizations: Individual Creativity Mechanisms, Organizational Creativity Mechanisms or Both? *Journal of Product Innovation Management, 17*(6), 424-434. doi: 10.1111/1540-5885.1760424

Bilsen, G. (2010). Leading organizational improvisiation: an exploration of the influence of leadership style on organizational improvisation.

Brown, S. L., & Eisenhardt, K. M. (1997). The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations. *Administrative Science Quarterly, 42*(1), 1-34.

Cannon-Bowers, J. A., Salas, E., & Converse, S. (1993). SHARED MENTAL MODELS IN EXPERT TEAM DECISION MAKING. *Individual and Group Decision Making: Current Issues*, 221.

Ciborra, C. U. (1999). Notes on improvisation and time in organizations. *Accounting, Management and Information Technologies, 9*(2), 77-94. doi: 10.1016/s0959-8022(99)00002-8

Crossan, M. M. (1998). Improvisation in Action. [Article]. *Organization Science, 9*(5), 593-599.

Crossan, M. M., Lane, H. W., & White, R. E. (1999). An organizational learning framework: From intuition to institution. *Academy of management review*, 522-537.

Crossan, M. M., Lane, H. W., White, R. E., & Klus, L. (1996). The improvising organization: Where planning meets opportunity. *Organizational Dynamics, 24*(4), 20-35. doi: 10.1016/s0090-2616(96)90011-x

de Vet, H. C. W., Terwee, C. B., Knol, D. L., & Bouter, L. M. (2006). When to use agreement versus reliability measures. *Journal of Clinical Epidemiology, 59*(10), 1033-1039.

Eisenberg, E. M. (1990). Jamming. *Communication Research, 17*(2), 139-164. doi: 10.1177/009365090017002001

Facione, P. A. (1998). Critical thinking: What it is and why it counts. *Millbrae, CA: California Academic Press. Retrieved April, 1*, 2004.

Gassmann, O., & von Zedtwitz, M. (1999). New concepts and trends in international R&D organization. *Research Policy, 28*(2–3), 231-250. doi: 10.1016/s0048-7333(98)00114-0

Gerber, E. (2009). *Using improvisation to enhance the effectiveness of brainstorming*. Paper presented at the Proceedings of the 27th international conference on Human factors in computing systems, Boston, MA, USA.

Hartmann, D. P. (1977). Considerations in the choice of interobserver reliability estimates. *Journal of Applied Behavior Analysis, 10*(1), 103.

Hatch, M. J. (1997). Commentary: Jazzing Up the Theory of Organizational Improvisation. *Advances in strategic management, 14*, 181-192.

Hatch, M. J. (1998). The Vancouver Academy of Management Jazz Symposium—Jazz as a Metaphor for Organizing in the 21st Century. *Organization Science, 9*(5), 556-568.

Hatch, M. J. (1999). Exploring the Empty Spaces of Organizing: How Improvisational Jazz Helps Redescribe Organizational Structure. *Organization Studies, 20*(1), 75-100. doi: 10.1177/0170840699201004

Kamoche, K., & Cunha, M. P. e. (2001). Minimal Structures: From Jazz Improvisation to Product Innovation. *Organization Studies, 22*(5), 733-764. doi: 10.1177/0170840601225001

Kamoche, K., Cunha, M. P. e., & Cunha, J. V. d. (2003). Towards a Theory of Organizational Improvisation: Looking Beyond the Jazz Metaphor. *Journal of Management Studies, 40*(8), 2023-2051. doi: 10.1046/j.1467-6486.2003.00410.x

Magni, M., Proserpio, L., Hoegl, M., & Provera, B. (2009). The role of team behavioral integration and cohesion in shaping individual improvisation. *Research Policy, 38*(6), 1044-1053. doi: 10.1016/j.respol.2009.03.004

Mendonça, S., Pina e Cunha, M., Kaivo-oja, J., & Ruff, F. (2004). Wild cards, weak signals and organisational improvisation. *Futures, 36*(2), 201-218. doi: 10.1016/s0016-3287(03)00148-4

Meyer, A. (1998). Organizing for Improvisation: The Backstage Story of the Vancouver Jazz Concert and Symposium. *Organization Science, 9*(5), 569-576.

Mirvis, P. H. (1998). Practice Improvisation. *Organization Science, 9*(5), 586-592.

Moorman, C., & Miner, A. S. (1996). Walking the tightrope: Improvisation and information use in new product development. *REPORT-MARKETING SCIENCE INSTITUTE CAMBRIDGE MASSACHUSETTS*, 3-6.

Moorman, C., & Miner, A. S. (1998). The Convergence of Planning and Execution: Improvisation in New Product Development. [Article]. *Journal of Marketing, 62*(3), 1-20.

Moorman, C., & Miner, A. S. (1998). Organizational Improvisation and Organizational Memory. *The Academy of Management Review, 23*(4), 698-723.

Moshavi, D. (2001). "Yes and...": Introducing Improvisational Theatre Techniques to the Management Classroom. *Journal of Management Education, 25*(4), 437-449. doi: 10.1177/105256290102500408

Orlikowski, W. J. (1996). Improvising Organizational Transformation Over Time: A Situated Change Perspective. *Information Systems Research, 7*(1), 63-92. doi: 10.1287/isre.7.1.63

Orlikowski, W. J., & Hofman, J. D. (1997). An improvisational model of change management: The case of groupware technologies. *Inventing the Organizations of the 21st Century, MIT, Boston, MA*, 265-282.

Pasmore, W. A. (1998). Organizing for Jazz. *Organization Science, 9*(5), 562-568. doi: 10.1287/orsc.9.5.562

Peplowski, K. (1998). The Process of Improvisation. [Article]. *Organization Science, 9*(5), 560-561.

Perry, L. T. (1991). Strategic Improvising: How to Formulate and Implement Competitive Strategies in Concert. [Article]. *Organizational Dynamics, 19*(4), 51-64.

Pina e Cunha, M., Vieira da Cunha, J., & Kamoche, K. (1999). Organizational Improvisation: What, When, How and Why. *International Journal of Management Reviews, 1*(3), 299-341. doi: 10.1111/1468-2370.00017

Ringstrom, P. A. (2001). "Yes, and …"—How Improvisation Is the Essence of Good Psychoanalytic Dialogue: Reply to Commentaries. *Psychoanalytic Dialogues, 11*(5), 797-806. doi: 10.1080/10481881109348644

Robertson, K. (2005). Active listening: more than just paying attention. *Australian family physician, 34*(12), 1053-1055.

Rogers, C., & Farson, R. E. (1979). Active listening. *Organizational Psychology, 3rd edn. New Jersey: Prentice Hall*.

Sawyer, R. K. (2000). Improvisation and the Creative Process: Dewey, Collingwood, and the Aesthetics of Spontaneity. *The Journal of Aesthetics and Art Criticism, 58*(2), 149-161.

Vera, D., & Crossan, M. (2005). Improvisation and Innovative Performance in Teams. *Organization Science, 16*(3), 203-224.

Wagenaar, M. (2008). Simulatie in de filosofie. *Philosophy of Science, Technology and Society. Enschede, University of Twente*.

Weick, K. E. (1993). The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster. [Article]. *Administrative Science Quarterly, 38*(4), 628-652.

Weick, K. E. (1993). Organizational redesign as improvisation. *Organizational change and redesign: Ideas and insights for improving performance, 346*, 379.

Weick, K. E. (1998). Introductory Essay: Improvisation as a Mindset for Organizational Analysis. *Organization Science, 9*(5), 543-555.

Attachment A - indicators per minute

Scene number	Session number (Gijs)	Td-intro (H:M:S)	Assignment	Leadership style	Td-feeback (H:M:S)	Td-body (H:M:S)	Td-value (=Td-body - Td-feedback) (H:M:S)	Td-value (=Td-body - Td-feedback) (M + S in % of M)	# Yes, and per minute	# Yes, and	# Opinion	# Expected answer	# Ignored	# 1-2-1 (return Q)	# Block	T-intro start (H:M:S)	T-intro end (H:M:S)	T-feedback start (H:M:S)	T-feedback end (H:M:S)	T-body start (H:M:S)	T-body end (H:M:S)
1	1,1	0:01:07	Toy	Dir	0:01:09	0:13:23	0:12:14	12,23	0,08	1	2	1			1	0:12:18	0:13:25	0:19:31	0:20:40	0:13:25	0:26:48
2	1,2	0:01:09	Jewel	Dir	0:01:05	0:12:42	0:11:37	11,62	0,26	3		3			1	0:26:50	0:27:59	0:35:35	0:36:40	0:27:59	0:40:41
3	2,1	0:01:50	Throne	Ser	0:03:15	0:18:45	0:15:30	15,50	0,58	9	6	1		2		0:10:05	0:11:55	0:20:17	0:23:32	0:11:55	0:30:40
4	2,2	0:01:13	Defense	Ser	0:01:31	0:11:02	0:09:31	9,52	0,74	7			1		1	0:34:02	0:35:15	0:41:45	0:43:16	0:35:22	0:46:24
5	2,3	0:01:12	Buffet	Ser	0:01:06	0:12:28	0:11:22	11,37	1,14	13	1	1			2	0:47:00	0:48:12	0:55:18	0:56:24	0:48:18	1:00:46
6	3,1	0:01:24	Sewage	Rot	0:01:23	0:10:44	0:09:21	9,35	1,93	18			5			0:06:48	0:08:12	0:12:41	0:14:04	0:08:12	0:18:56
7	3,2	0:01:20	Armor	Rot	0:01:25	0:12:04	0:10:39	10,65	1,41	15	2				3	0:18:58	0:20:18	0:25:55	0:27:20	0:20:18	0:32:22
8	4,1	0:02:06	Armor	Rot	0:02:25	0:19:01	0:16:36	16,60	1,45	24			1		1	0:07:42	0:09:48	0:18:10	0:20:35	0:09:48	0:28:49
9	4,2	0:01:38	Transport	Rot	0:01:53	0:14:09	0:12:16	12,27	1,14	14					2	0:28:49	0:30:27	0:39:40	0:41:33	0:30:27	0:44:36
10	5,1	0:01:23	Toy	Dir	0:01:35	0:16:16	0:14:41	14,68	0,61	9	1	2		3	3	0:00:19	0:01:42	0:09:03	0:10:38	0:01:42	0:17:58
11	5,2	0:01:35	Jewel	Dir	0:01:29	0:10:11	0:08:42	8,70	0,23	2		1			2	0:18:31	0:20:06	0:25:11	0:26:40	0:20:06	0:30:17
12	5,3	0:01:07	Hat	Dir	0:00:44	0:06:23	0:05:39	5,65	1,24	7			1		3	0:30:22	0:31:29	0:33:57	0:34:41	0:31:29	0:37:52
13	6,1	0:01:15	Throne	Ser	0:02:20	0:16:40	0:14:20	14,33	0,07	1	1	2	1	1	2	0:00:25	0:01:40	0:07:09	0:09:29	0:01:40	0:18:20
14	6,2	0:01:34	Defense	Ser	0:01:56	0:13:41	0:11:45	11,75	1,02	12		1	2	1	2	0:19:26	0:21:00	0:29:24	0:31:20	0:21:00	0:34:41
15	6,3	0:01:26	Tent	Ser	0:01:24	0:10:27	0:09:03	9,05	0,77	7	1	2		2		0:36:15	0:37:41	0:42:00	0:43:24	0:37:41	0:48:08
16	7,1	0:02:04	Armor	Rot	0:02:47	0:18:50	0:16:03	16,05	1,18	19			3	3	1	0:00:05	0:02:09	0:13:34	0:16:21	0:02:09	0:20:59
17	7,2	0:01:58	Transport	Rot	0:00:00	##########	##########	#GETAL!	#GETAL!	8	3		1	1	3	0:00:05	0:02:03	0:00:00	0:00:00	0:02:03	0:00:00
18	8,1	0:01:44	Toy	Dir	0:02:22	0:19:28	0:17:06	17,10	0,12	2		1	2			0:00:03	0:01:47	0:12:00	0:14:22	0:01:47	0:21:15
19	8,2	0:01:37	Jewel	Dir	0:01:23	0:07:11	0:05:48	5,80	1,38	8		1			1	0:00:17	0:01:54	0:11:42	0:13:05	0:10:54	0:18:05
20	9,1	0:02:50	Throne	Ser	0:00:56	0:18:55	0:17:59	17,98	1,22	22			1	1	1	0:00:10	0:03:00	0:10:02	0:10:58	0:03:00	0:21:55
21	9,2	0:02:16	Defense	Ser	0:01:52	0:19:25	0:17:33	17,55	0,74	13	2		2		1	0:00:05	0:02:21	0:08:38	0:10:30	0:00:05	0:19:30
22	10,1	0:02:41	Armor	Rot	0:00:51	0:19:29	0:18:38	18,63	0,64	12			3		1	0:00:08	0:02:49	0:14:04	0:14:55	0:02:49	0:22:18
23	10,2	0:02:43	Transport	Rot	0:02:20	0:25:28	0:23:08	23,13	0,86	20	3	3	2		4	0:00:05	0:02:48	0:15:56	0:18:16	0:02:48	0:28:16
24	11,1	0:02:11	Jewel	Dir	0:01:44	0:16:24	0:14:40	14,67	1,30	19					1	0:00:05	0:02:16	0:10:31	0:12:15	0:02:16	0:18:40
25		#######			#######	#WAARDE!	#WAARDE!	#WAARDE!	#WAARDE!							-	-	-	-	-	-
26	12,1	0:01:56	Throne	Ser	0:01:51	0:18:48	0:16:57	16,95	0,59	10	2	1	2			0:00:16	0:02:12	0:11:06	0:12:57	0:02:12	0:21:00
27	12,2	0:02:13	Defense	Ser	0:02:38	0:13:12	0:10:34	10,57	0,47	5			1			0:00:20	0:02:33	0:13:07	0:15:45	0:02:33	0:15:45
28	13,1	0:02:20	Armor	Rot	0:01:24	0:13:46	0:12:22	12,37	1,29	16		1			2	0:00:08	0:02:28	0:09:54	0:11:18	0:02:28	0:16:14
29	13,2	0:01:55	Transport	Rot	#######	0:03:49	#WAARDE!	#WAARDE!	#WAARDE!	5			3			0:00:07	0:02:02	-	-	0:02:02	0:05:51
30	13,3	0:01:21	Toy	Dir	0:01:58	0:10:52	0:08:54	8,90	1,01	9	1		3			0:00:05	0:01:26	0:07:35	0:09:33	0:01:26	0:12:18

T = Time (point in time)
Td = Time (duration)

AverageA 0,89

Attachment B

Dear participant,

Thank you for taking the time to help me in my research. The task you have been asked to perform is to count the amount of instances in which "Yes, anding" takes place in a recorded improvised theatre scene.

Four movie clips of about 15 minutes each will be presented in which four actors situated in the middle ages must work together in varying configurations to achieve a goal stated by the emperor/empress in the beginning of the scene. In order to understand what is supposed to be counted please read the text below to understand what "Yes, anding" is, and how to count it in the movie clips.

Yes, and

An important part of improvisational theatre (often called *improv)* is visible in the practice of, 'Yes, anding'. In improv actors make offers to each other. An offer is a possibility to extend or change the scene, such as a suggestion or behavior by another actor. The process of accepting an *offer* in theatrical improvisation is visible by an actor saying: "Yes, and" (or at least agreeing on or taking along with the *offer*, and then building the scene further upon this offer) and this forms the most important rule in improvisational theatre. Accepting offers ("yes") and building upon them ("and") allows for developing the scene into more refined characters, and develops new situations. Since improvisation theatre contains no script, the practice of 'Yes, anding' is extended into every technique used in improv theatre. Most players in improv make use of *mime*, in order to define invisible props which usually are not available on stage. Actors respect these objects and this means it is not possible to walk through a table which has been defined by another actor. Furthermore 'Yes, anding' also implies the possibility to extend the mime-part of the scene. For example; actor A: "Look at these beautiful flowers on the purple chair", actor B: "Yes, and I have also put water in the vase". This establishes for both actors there exists an imaginary purple chair, and there are flowers on top which sit in a vase filled with water.

The defining characteristic of 'Yes, anding' is the usage of other actors ideas/behavior or something else to grow the scene with new items or situations.

In order to define more closely what 'Yes, anding' entails, a few common unclarities will be elaborated below:

- Please note that Actor A saying: "Look at this beautiful vase with flowers", and actor B saying: "Let's put water in it" is also an example of Yes, anding; even though neither one of the actors actually said "Yes".
- 'Yes, and' does not mean an actor has to switch towards the idea of the fellow actor, but is saying "Yes" (the other actor's idea) "and" (the added own idea), and taking this idea or situation into the scene along with what was already established.
- There is a difference between just agreeing (Yes) and agreeing and taking the idea into the scene for further development. (Yes, and).
- Sometimes an actor will think and speak at the same time, when an actor does this and also shows some agreement with him/herself this may be counted as an instance of 'Yes, anding'.

    - For example: “What should I do here”…”Maybe I can use a hammer”…”Yes, and a nail gun”. There has to be some form of agreement with the actor’s own thought to let this count.
- Sometimes the difference between an opinion and ‘Yes, anding’ is unclear; the defining difference is an opinion does not change a scene, where Yes, anding does.
- Sometimes a question and answer can be similar to ‘Yes, anding’, however again no real changes are made to the scene.
    - For example: A: “What do you think we should do?” B:“Throw the chair away”
- Questions which have an expected answer are not ‘Yes, anding’
    - For example: A: “Could you get tea” B: “Of course”

Again note: *The defining characteristic of ‘Yes, anding’ is the usage of other actors ideas/behavior or something else to grow the scene with new items or situations.*

This establishes what should be counted; notions of actor A posing an idea or situation, and actor B taking this idea and building upon it.

If you have any questions please feel free to ask clarification.

Good luck!

Scene number	# of *offers*	# of Yes, ands
Scene 1		
Scene 2		
Scene 3		
Scene 4		

Attachment D

Beste beoordelaar,

Als eerste wil ik u bedanken voor het helpen in mijn onderzoek. Wat ik van u wil vragen is om het aantal 'Ja, en'-situaties in een aantal vastgelegde improvisatie-theaterscènes te tellen.

Er zal een viertal filmpjes worden gepresenteerd van ongeveer 12 minuten in lengte. In deze filmpjes moeten vier acteurs samenwerken om een doel te bereiken dat is opgedragen aan het begin van de scène door de keizer(in) van desbetreffend keizerrijk. Om te begrijpen wat precies moet worden geteld vraag ik u om de onderstaande tekst aandachtig in zijn geheel door te lezen. Hier wordt uitgelegd wat wordt bedoeld met 'Ja, en', en welke methode u het beste kunt gebruiken om de scenes te tellen.

'Ja, en'
Een belangrijk deel van improvisatietheater (vaak *improv* genoemd) is het toepassen van 'Ja, ennen' (In het Engels eenvoudig 'Yes, anding' genoemd). Het idee hiervan is dat acteurs gebruik maken van elkaar om scenes uit te breiden. In improv doen acteurs een 'aanbod' naar elkaar, dit kan bijvoorbeeld een suggestie of gedrag van een andere acteur zijn en is breed interpreteerbaar.

Een aanbod wordt geaccepteerd als een acteur "Ja" zegt in reactie op een aanbod. Het vervolgens gebruiken van dit aanbod om de scène uit te breiden is het kenmerk van een 'Ja, en'-moment. *Een acteur hoeft niet letterlijk "Ja" te zeggen. Als uit de toevoeging in de scnene blijkt dat het een uitbreiding betreft op een eerder aanbod heeft de acteur uiteraard ook ingestemd met het aanbod.* Dit vormt de meest basale regel van theaterimprovisatie. Het alleen accepteren van een aanbod is dus onvoldoende en voldoet niet aan het principe van 'Ja, ennen'. Het accepteren van een aanbod ("Ja") en het bouwen van de scene op dit aanbod ("en") maakt het mogelijk om de scene uit te bouwen met complexe karakters en ontwikkelt nieuwe situaties. Aangezien theaterimprovisatie geen script bevat, wordt het gebruik van 'Ja, ennen' toegepast in elke technkiek van improvisatietheater. Vaak maken improv-acteurs gebruik van *mime*, om onzichtbare attributen te maken die niet beschikbaar zijn op het podium. Andere acteurs respecteren deze objecten en dit betekent dat het niet mogelijk is om door een onzichtbare tafel te lopen die is 'gemaakt' door een andere acteur.

De kenmerkende eigenschap van 'Ja, ennen' is het gebruik van ideeën, gedrag of iets anders van andere acteurs om de scene uit te breiden met nieuwe attributen , situaties en eigenschappen.

Om duidelijk te maken hoe u het aantal 'Ja, en'-situaties het beste kunt tellen in de filmpjes, heb ik besloten om een aantal beperkingen op te leggen voor het tellen. Dit maakt het idee wat eerder is beschreven over 'Ja, ennen' wat minder breed. Doel hiervan is het helder maken van de beslissingscriteria over wanneer iets wel of niet mag worden geteld als een 'Ja, en'-situatie. De belangrijkste beperking die is opgelegd is dat de 'Ja, en'-situatie betrekking moet hebben op het *product*, het *idee of prototype voor een product* of de *eigenschappen van het product* in de desbetreffende scène. Dit moet het makkelijker voor u maken om te beslissen wanneer het *wel* en *niet* meetelt.

De eenvoudigste manier voor u om het aantal 'Ja, en'-momenten te tellen in de filmpjes is door bij elke keer dat u een (vermoedelijke) 'Ja, en'-situatie waarneemt, het filmpje stil te zetten. U kunt dan

bijgevoegde flowchart gebruiken om te bepalen of het moment wel of niet telt als een ‘Ja, en’-moment.

Vervolgens vraag ik u om per situatie op te schrijven *waar* in het filmpje dit plaatsvond (tijd noteren in het filmpje) en *wat er is toegevoegd* aan het product. Als u twijfelt of iets reeds genoemd is in het verleden kunt u eenvoudig terugkijken in de kolom ‘wat er is toegevoegd’ om te zien wat u al eerder heeft genoteerd.

Mocht u twijfels hebben of iets *wel* of *niet* een ‘Ja, en’-situatie is, dan verzoek ik u om deze situatie wel te noteren, net zoals de andere ‘Ja, ens’. Om achteraf onderscheid te kunnen maken over waar u over heeft getwijfeld markeert u bij deze gevallen het vakje bij: ‘? twijfelgeval’.

Dus:

De definitie van het tellen van het aantal ‘Ja, en’-situaties wordt samengevat door het aantal malen dat aanpassingen of toevoegingen aan het product worden gemaakt door acteur B, die voortbouwt op een idee of voorstel dat door acteur A wordt gedaan.

De bijgevoegde flowchart hanteert deze definitie in een stappenplan om zoveel mogelijk onduidelijkeid weg te nemen.

Op pagina 3 t/m 6 vindt u per filmpje een invullijst. De titel van het filmpje en de link waar u deze kunt bekijken staan ook vermeld, eventueel kunt u dezelfde link aanklikken in mijn e-mail bericht. Het is van belang dat u de filmpjes in dezelfde volgorde bekijkt als de lijst en de nummering.

Mocht er nog iets onduidelijk zijn dan hoor ik het graag en zal ik het toelichten.

Succes!

Tom van Eerde
06-41913393
tom@tvaneerde.nl

P.S. Als u de formulieren op papier heeft ingevuld vraag ik u vriendelijk om een aantal foto’s of scans van de ingevulde formulieren te e-mailen naar tom@tvaneerde.nl indien we elkaar niet meer treffen.

Film 1: 6.3 Tent

Link: http://vimeo.com/55116264 (wachtwoord is impro)

Scene nummer	Ja, en nummer	Tijdstip in film (H:M:S)	Toevoeging gemaakt aan het product door 'Ja, ennen'	? twijfel geval
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			
	40			

Film 2: 3.2 Harnas

Link: http://vimeo.com/55108985 (wachtwoord is impro)

Scene nummer	Ja, en nummer	Tijdstip in film (H:M:S)	Toevoeging gemaakt aan het product door 'Ja, ennen'	? twijfel geval
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			
	40			

Film 3: 15.3 Speelgoed

Link: http://vimeo.com/55107003 (wachtwoord is impro)

Scene nummer	Ja, en nummer	Tijdstip in film (H:M:S)	Toevoeging gemaakt aan het product door 'Ja, ennen'	? twijfel geval
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			
	40			

Film 4: 5.2 Sieraad

Link: http://vimeo.com/55100155 (wachtwoord is impro)

Scene nummer	Ja, en nummer	Tijdstip in film (H:M:S)	Toevoeging gemaakt aan het product door 'Ja, ennen'	? twijfel geval
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			
	40			

Attachment E – Flowchart