

The influence of national culture on the use of effectuation and causation by American student entrepreneurs

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Bachelor's project Industrial Engineering

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November 16, 2012

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Abstract

As part of the EPICC Project this bachelor thesis researches how culture influences the use of effectuation and causation by American student entrepreneurs when making business decisions. It concentrates on Sarasvathy's theory of effectuation, which entails focusing on means (effectuation) instead of goals (causation), and uses this upcoming framework to investigate how Hofstede's cultural dimensions might affect student entrepreneurs in their decision making. Hypotheses are formulated in which Hofstede's dimension of individualism, which is the highest in the United States of all measured countries, is linked to elements of effectuation or causation. Optimism, linked with individualism, is discovered from literature to be one of the aspects of the American culture that might influence this entrepreneurial decision making. Effectuation and causation each have different elements and the research measures the use of both opposing elements per category by conducting 'think aloud' business case interviews with 15 American student entrepreneurs, after which the protocols are coded to count the number of times different elements were mentioned. Via questionnaires, data on the participants' optimism and other demographics is gathered.

This data results in finding that the research sample is driven by means instead of goals, is focused on expected returns instead of affordable loss and does not show a significant preference for non-predictive or predictive control, for leveraging or avoiding contingencies and for analyzing competition or potential partnerships. The value of the case data is confirmed with the outcome of the questionnaires on the entrepreneur's own company. Effectuation and causation as whole concepts are not correlated with optimism but two hypothesized links with optimism prove to be significantly present, in that a higher optimism leads to both less focus on affordable loss (a causal element) if two extreme cases are left out, and to a larger focus on goals instead (a causal element) of means if one case was left out. With that, it is concluded that there was no influence found from the American culture on the use of effectuation or causation as a whole by American student entrepreneurs, but the entrepreneurial processes are influenced by their country's culture, in that optimism influences aspects of effectuation and causation.

Acknowledgements

My research would not have been possible without the participation of the student entrepreneurs, who all committed some of their valuable time. Therefore I would like to thank everybody who participated in my research project: Jesús Salas from TxtRoo.com, Laura Borel from Nutrivise.com, Fergus Hurley from Clixtr.com, Sriram Subramanian from Fermyon.com, Timothy Liu from Kloudless.com, Taylor Smith from RubyWallet.com, David Litwak from Mozio.com, Riaz Rahim from DTX Labs, Ryan Guerrettaz from CollegeNoteShare, Kiri Yu, Jake Rozmaryn from EcoBrandingSolutions.com, Mark from SocialSoft.co, Eva Roa from Chompus, Puneeth Lath from College Works Painting, Paul Velasquez from BayAreaVeggies.com, Spencer Poff from Lingual.me, Andrew Chan from Spotfodo.com, Andrew Dunkle from GoOverseas.com and Jordan Inglebright from ESEF Apparel.

I would like to thank my main supervisor, M.S. Stienstra, MSc., and second supervisor, Dr. T. Ratinho, both of the University of Twente, for helping me participate in the EPICC Project and for their feedback during my project.

Special thanks go to everyone who helped me connect to entrepreneurs around the area of San Francisco or helped me in any other way during my stay in the United States and back home.

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1. Introduction

In this chapter, the research is introduced and the research question is formulated. It is explained why this thesis is a valuable contribution to the field of entrepreneurship and the chapter concludes with the outline for the rest of the thesis.

1.1 Background

“Here is to the crazy ones. The misfits. The rebels. The troublemakers. The round pegs in the square holes. The ones who see things differently. They’re not fond of rules. And they have no respect for the status quo. You can quote them, disagree with them, glorify or vilify them. About the only thing you can’t do is ignore them. Because they change things. They push the human race forward. While some may see them as the crazy ones, we see genius. Because the people who are crazy enough to think they can change the world, are the ones who do.”
- the text of the Apple think different commercial of 1997.

It must be one of the greatest entrepreneur stories of all time: what started in a garage grew to one of the most successful and popular companies in the world: Apple Inc. (Jobs, 2005). Entrepreneurs today can be the big companies of tomorrow. This development might be a reason entrepreneurship has grown more and more popular (Finkle & Deeds, 2001). With this growing interest in entrepreneurship, a lot of academic research has been done considering entrepreneurs as well: the traits of successful entrepreneurs are set out, entrepreneurial strategies are compared (Sarasvathy, 2003) and the sociology behind entrepreneurs has been analyzed (Thornton, 1999); entrepreneurial studies have been set up, often as part of entrepreneurial programs, and boot camps are organized to support nascent entrepreneurs (Barbe, Magids, & Thornton, 2003).

In the later years of the 1990’s, there became a need for a theory that would provide answers for important pending questions about the entrepreneurial process: ‘What exactly do entrepreneurs do that is distinct from managerial functions?’ (Busenitz & Barney, 1997) and ‘How do they do it?’ (Moroz & Hindle, 2011). It became questioned whether there may be a disconnect between the theory on entrepreneurship and the empirical finding studies on the practice of entrepreneurship produced (Moroz & Hindle, 2011).

Research in the 2000's tried to provide answers to these questions and we now know who entrepreneurs are and we know how to teach them. An important subject that was still unclear however, was how entrepreneurs work in reality: How do they make decisions? How do they work and where do they focus on? A discrepancy between theory and practice could be seen; for example: there was a lot of literature about how a market can be addressed, but most entrepreneurs do not even know if a market would exist, let alone they could analyze it (Sarasvathy, 2001a). A lot of research had been done on the traits of (successful) entrepreneurs, but there became a need for developing an understanding of entrepreneurial behavior and the entrepreneurial processes themselves (Goel & Karri, 2006).

Sarasvathy contributed to the fulfilling of this need when she conceptualized the different behaviors entrepreneurs can turn to when starting their firm and making business decisions. She differentiated between effectuation and causation. Simply put, an entrepreneur who uses causation focuses on goals and searches the means accordingly, while an entrepreneur that uses effectuation focuses on the means available and which possible effects can be created with it (Sarasvathy, 2001b). These two approaches can have very different implications for the starting entrepreneur. It is this theory from Sarasvathy that this thesis, as part of the EPICC Project (Entrepreneurial Processes in a Cultural Context), focuses on. We concentrate on Sarasvathy's theory and research how effectuation and causation could be linked to a country's culture.

This introduction of the concept of culture to the theory of effectuation is important, because it was often found that entrepreneurs are influenced by their country's culture in a large amount. For instance, Mueller and Thomas (2000) researched whether countries with different scores for the cultural dimensions of Hofstede showed systematic differences in entrepreneurial behavior. They focused on innovativeness and locus for control (an internal locus of control means that the outcome of an event is felt as within the personal control, while an external locus of control means that it is experienced as beyond one's personal control). The researchers concluded, after conducting an investigation in nine countries with over 1,800 respondents, that what they call "entrepreneurial orientation" (Mueller & Thomas, 2000, p. 62) - an internal locus of control and innovativeness - is more prevalent in countries with a high score for Hofstede's dimension of individualism and a low score for the uncertainty avoidance

dimensions, than in countries with a low score for individualism (collectivistic cultures) and a high score for uncertainty avoidance.

Other researchers found similar kinds of relationships between entrepreneurship and culture and this kind of research provides information on how entrepreneurship and entrepreneurs themselves are influenced by the culture they live in. The contribution of the EPICC Project to the field of entrepreneurship research is to make this connection in regard to Sarasvathy's theory of effectuation. In this way it does not concentrate on the influence of culture on performance of entrepreneurs, on which a lot of research has already been done, but on the influence of culture on entrepreneurial processes, so how (and not how well) the entrepreneurs act. In this way, a contribution is made to the theory on effectuation, so we can characterize entrepreneurs even better and explain how they work within different cultures.

Research for the project is now conducted in more than 15 countries. The end result will be a comparison of countries' cultures with regard to how they influence the way entrepreneurs think and act; do they use a more effectual or causal mindset? In this bachelor's project, we concentrate on American student entrepreneurs and on our research carried out in America. We analyze the American culture and discover how entrepreneurs might be influenced by it and how this might affect their use of effectuation or causation when making business decisions.

1.2 Research question

In this thesis we focus on the United States and on the theory of effectuation. We will research how effectuation, or its opposing concept causation, is used by entrepreneurs when making decisions for their company and how this is linked to the American culture. In this way, we try to answer the main research question: *"How does culture influence the use of effectuation and causation by American student entrepreneurs when making business decisions?"*

This question cannot be answered directly, because of the many elements it entails. We first have to investigate what is already known about entrepreneurial processes and national culture in general, and about the American culture and its entrepreneurs in particular, so hypotheses can be formulated. Furthermore, we have to come up with a

way to investigate the potential influence of culture on entrepreneurs. After analyzing the results from this test we can derive conclusions on the influence of the American culture on the use of effectuation and in this way answer the main research question.

1.3 Importance and contributions to research and practice

Effectuation is a relatively new concept (Perry, Chandler, & Markova, 2011) and it has great promises: When effectuation is validated and accepted by everyone in the field, it could lead to a new paradigm for entrepreneurial programs; university programs that focus on entrepreneurship, now (unconsciously) primarily use a causation-based approach (Sarasvathy, 2001a). When effectuation receives enough support, it could for instance lead to a shift from accentuating courses that focus on market analyses (as is now often the case) to course subjects that teach creating markets with the means at hand. Not only the curriculums could change, effectuation might also help the practitioners themselves: if they know different approaches (effectuation and causation) exist, they are able to make a more conscious choice.

One of the goals of this thesis is to contribute to this theory on effectuation by investigating what the influence of culture is and in this way provide more clarity to the way entrepreneurs act in different countries. When we can map the differences between entrepreneurial processes in different cultures in the world, this could lead to more precise adjustments in programs and entrepreneurial thinking. Therefore we research whether the addition of a cultural aspect to the effectuation literature would be a valuable contribution to the effectual framework.

In this way we also make a contribution to the field of cultural research. As we explained, we will choose a cultural framework and link this to the elements of effectuation and causation. In this way we introduce culture to a field (effectuation) where it has not yet been researched. “Entrepreneurial activities are considered an important source of technological innovation (Schumpeter, 1934) and economic growth (Birley, 1987). Therefore, understanding the influence of national culture on entrepreneurship is of considerable theoretical and practical value.” (Hayton, George, & Zahra, 2002, p. 33).

1.4 Outline of the thesis

In the subsequent chapters we try to derive an answer to the main research question: “How does culture influence the use of effectuation and causation by American student entrepreneurs when making business decisions?” Chapter 2 presents a theoretical framework on the subjects for this research: It describes Sarasvathy’s effectuation theory, presents the different theories and frameworks on culture and links these two elements together by means of ‘optimism’, specific for the American culture, to conclude with the formulation of hypotheses. Chapter 3 describes the methodology: the way the research is conducted, the way data is gathered, the research sample that is researched and discusses the validity of the research. Chapter 4 presents the found data and gives results in regard to the hypotheses. Chapter 5 evaluates the found results for the hypotheses in regard to literature and will discuss any limitations of the way the research was conducted. The chapter concludes with an answer to the main research question and suggestions for further research.

2. Theoretical framework

In this chapter, literature is discussed to provide a theoretical background as framework for the research. This framework will be used to formulate hypotheses for the expected results. There are three components to the research question that have to be discussed to be able to provide a good background for the study and to formulate hypotheses:

1. The theory of effectuation and causation
2. A theoretical framework considering culture
3. A possible link between these two concepts

For these three aspects, we will provide a comprehensive literature background in the subsequent sections.

2.1 The theory of effectuation

In 2001 Saras D. Sarasvathy laid the first groundwork for the theoretical elements of ‘causation’ and ‘effectuation’. In her paper she first explicated the mismatch between strategies that are learnt in MBA programs and the ‘real world problem’ an entrepreneur faces: While in class you learn how to analyze a market potential, how to hire staff for the right position or how to predict the future for your organization, in practice an entrepreneur often wants to sell to a market that does not even exist yet, does not have an organization for which somebody can be hired and internet made it clear that it is practically impossible to predict the future of start-ups (Sarasvathy, 2001a).

Sarasvathy explains how she discovered what she names ‘effectuation’ by letting ‘expert entrepreneurs’ (who have attained a high level of performance in their domain as a result of years of experience) work through these kinds of business problems while thinking aloud (Sarasvathy, 2003). The subjects did not try to analyze the market or set goals for themselves, but showed to start from three categories of means: who they are, what they know and who they know (Sarasvathy, 2001a). They start with these means and do not try to predict the future but to control it and focus on what they can do instead of what they ought to do (Sarasvathy, 2003). Figure 1 (from a later article) graphically depicts the difference between the effectual way these expert entrepreneurs assessed the problems and the predictive (or causal) process that can be used.

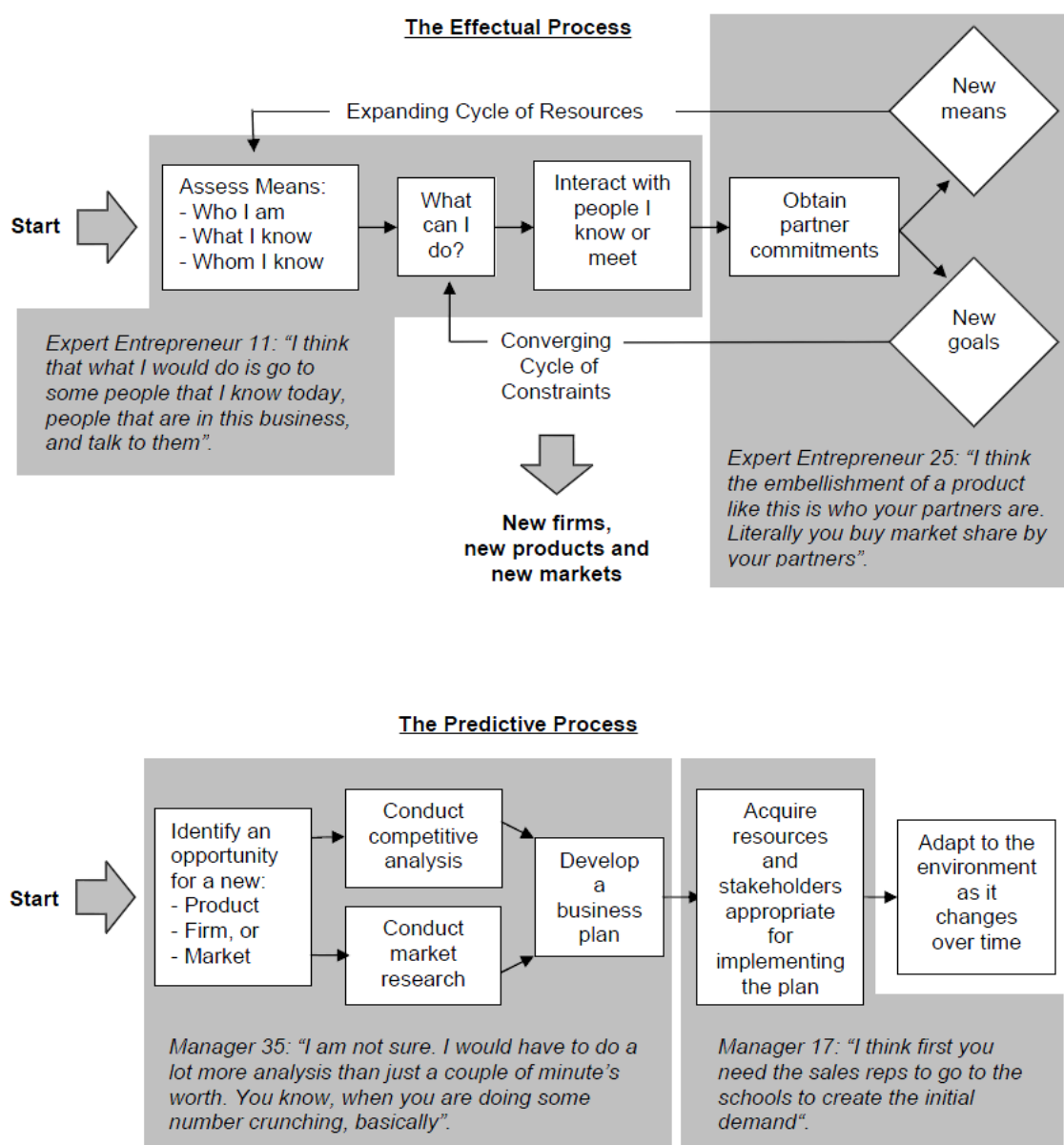


Figure 1 Graphical comparison of the effectual process and the predictive (causal) process (Read, Dew, & Sarasvathy, 2008)

Sarasvathy explains the logic of this effectual way of thinking by showing difficulties on a rational goal-seeking strategy when goals are not yet clear: how could one for instance calculate the optimal pricing decision, when the firm does not yet exist or even the market for the product is not yet in existence (Sarasvathy, 2001a). The different ways of dealing with discrepancy is what Sarasvathy explained by the difference between causation and effectuation. The most important difference between these two approaches is that "Causal processes take a particular effect as given and focus on

selecting between means to create the effect. Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means.” (Sarasvathy, 2001a) (Goel & Karri, 2006, p. 478). The standard MBA curriculum is mostly causation-based, while entrepreneurial decisions often ask for a more effectuation-based approach (Sarasvathy, 2001a) is what she concludes after discussing the situations in which entrepreneurs have to make decisions. While causal reasoning is focused on planning and subsequent execution, effectual reasoning is all about execution itself (Sarasvathy, 2001b).

Effectuation has many aspects and can be explained in numerous ways, but the main consensus, is that the differences between effectuation and causation show itself in the following aspects (where effectuation is named first) (Dew, Read, Sarasvathy, & Wiltbank, 2009):

1. Means-driven as opposed to goal-driven action: Emphasizing on creating something new with existing means, rather than discovering new ways to achieve given goals (Sarasvathy, 2003).
2. Non-predictive as opposed to predictive control: Focusing on the controllable aspects of an unpredictable future rather than focusing on the predictable aspects on an uncertain future (Sarasvathy, 2001a).
3. Affordable loss as opposed to expected return: Committing in advance to what one is willing to lose, rather than investing in calculations about expected returns (Sarasvathy, 2003).
4. Partnerships as opposed to competitive analysis: Emphasizing on potential strategic partnerships and alliances as a way to reduce uncertainty or to erect entry barriers, rather than emphasizing on detailed analysis of competitors (Sarasvathy, 2001a).
5. Leveraging as opposed to avoiding contingencies (Dew, Read, Sarasvathy, & Wiltbank, 2009): Acknowledging contingencies by leveraging surprises, rather than trying to avoid them or overcome them (Sarasvathy, 2003).

While causation and effectuation are clearly distinct (Chandler, DeTienne, McKelvie, & Mumford, 2011), this is not to say that the approaches cannot be combined and that an entrepreneur has to choose either effectuation or causation (Sarasvathy, 2003). The same person can use both effectual and causal reasoning at different times, depending

on what the circumstances call for (Sarasvathy, 2001b). Companies also seem to use both mindsets at the same time to a large extent, but it is still a question how this is exactly possible (Harms, not published yet). With regard to entrepreneurs, it is often seen that they use effectual decision making mostly in early stages, while after a period of growth, the situation calls for a more causal approach. In the start of their businesses however, entrepreneurs do face the choice, often unconsciously, to “develop a full-blown business and marketing plan” or to “just get started” (Chandler, DeTienne, McKelvie, & Mumford, 2011), which already shows the difference between causation and effectuation. A remarkable note to make here is that even a business-plan, which is often needed for entrepreneurs to draw funding or join a competition, has a causal basis (Chandler, DeTienne, McKelvie, & Mumford, 2011).

Another important remark is that it is possible to use effectuation at different levels: Entrepreneurs can have an effectual approach when starting their business and assess the possible means, including themselves: who they are, who they know and what they know. At the level of the firm, an effectual approach is also possible; in this regard, the means are for instance physical resources, human resources and organization resources (Sarasvathy, 2001a). While it is possible to use effectuation on multiple levels as a basis for decision making, it is important to see the difference Sarasvathy makes between entrepreneurs and the firm: firms fail; entrepreneurs do not (Moroz & Hindle, 2011), with which she means that effectuation theory is about the performance of the entrepreneur, which is not per se in line with that of the firm the entrepreneur creates (Sarasvathy, 2003).

It may seem like effectuation is presented as a normative theory. This is not the case; it is shown to be another approach than the more traditionally known causation approach and not to be a better or worse one. Not only might a causation approach be the better choice in later stadiums of a corporation (Sarasvathy, 2001b), effectuation on itself also has its drawbacks: Because there are no pre-existent goals or effects, but these emerge throughout the entrepreneurial process, and entrepreneurs do not try to predict the future, they or their partners may end up creating harmful and problematic effects for the society or environment they work in (Sarasvathy, 2001b). Effectuation might also lead to over-trust, which on itself could have harmful effects (Goel & Karri, 2006).

The writings of Sarasvathy in 2001 meant the basis of the effectuation literature for entrepreneurial behavior. Ever since, other research and Sarasvathy herself have tried to expand the theory to other fields and to further empirically support it. In 2009 for instance, Dew et al. showed that there is evidence that novice entrepreneurs think in a more causation-based and expert entrepreneurs are more effectuation-based in their decision making. Read (2008) found the same in his research. While there could be numerous reasons for this difference (for instance the different in age or the just finished MBA program or the use of small research groups) this kind of research is expected to take the theory of effectuation to the next level.

Sarasvathy first explained her concept of effectuation in 2001 and discussed her findings for the first time in 2008 and because a paradigm shift, to which the effectuation theory could possibly lead, takes an average of nineteen years, it could be suggested that the theory of effectuation is still in its infancy phase (Perry, Chandler, & Markova, 2011). Perry et al. (2011) suggest that effectuation literature is now between the nascent and intermediate stage and is ready for making new links to other literature to compose new elements and findings. This is exactly what our goal is: adding a cultural layer to the effectuation literature.

2.2 Culture

To be able to discuss the influence a culture could have on an entrepreneur, we first have to choose a definition. Important is that culture can show itself on different levels: it can be a “shared modus operandi” but also “the shared values that underpin the modus operandi.” (Dahl, 2004, p. 2) The concept thus describes both the underlying value that induces certain behavior as well as the behavior that can be observed itself.

This broad influence and pervasiveness of culture makes defining it difficult (Soares, Farhangmehr, & Shoham, 2007). After discussing Hofstede (1994), Hall (1983) and Spencer-Oatley (2000), Dahl (2004) concludes that “culture consists of various factors that are shared by a given group, and that it acts as an interpretive frame of behavior” (p. 4). We will use this definition as the basis for our further literature research. Important is to emphasize that a nation’s culture is not the same as its values. Values cannot be seen directly, while some elements of culture can. The total concept of culture includes not only its values, but also its symbols, heroes and rituals (Hofstede, 2001).

Culture can demonstrate itself on multiple levels: sub parts of countries have their own sub cultures, nations have their cultures and there are also international cultures, for instance the European culture (Smith, 2004). Because it is not possible to investigate all these levels in one research, a decision has to be made. For our research and for the EPICC research, we have chosen to take national culture as a first focus, for reason of practicality - the nationality of an individual is easy to establish, while a sub-culture's membership is not that easy - and because it has no important disadvantages. There is also lot of support that people coming from one country will be shaped by largely the same values and norms as their compatriots (Hofstede, 1991; Smith and Bond, 1998, cited by Dahl, 2004). Furthermore in this way the results from our research could in the future be more easily compared and related to other research in the field, which most often uses nationality as a basis for culture. Later conclusions could be made for combinations, to be able to make, for instance, a comparison of the 'eastern' and 'western' cultures.

An important idea of culture regarding our research is the 'iceberg model'. It entails that only a small part of a culture can be directly spotted, while there is also a large area that is not directly visible. This area could be derived from carefully investigating the visible elements (Dahl, 2004). This is exactly where we have to deal with when researching effectuation and causation: the influence of a culture on entrepreneurs and the difference between cultures will not be directly and unambiguously visible in the differences in effectuation and causation. We can only see and measure more superficial differences and have to extensively analyze the cultures to come to a model of how these results were influenced by culture. There are a lot of aspects in a culture that can influence the way people think and in that regard also how entrepreneurs assess problems. In the next section, we will search for a theoretical framework that addresses these cultural differences as completely and appropriately as possible.

We need to have a framework of how we can link the culture of a country to the way of thinking of entrepreneurs. A lot of literature is written about how culture affects entrepreneurship. It is for instance found that cultures in which risk taking and independent thinking is desirable are more likely to show entrepreneurial behavior than cultures in which conformity is reinforced and group interest and control over the future

are seen as important (Hayton, George, & Zahra, 2002). While this shows that entrepreneurship is influenced by culture, we cannot connect it to effectuation or causation, which is exactly what we want to do. We have to find one or multiple cultural dimensions and theories we can apply to a country's culture, as well as to effectuation/causation, to be able to establish links in this way.

There is much choice on theories and frameworks on culture assessment. One often used approach in describing countries, is by using dimensions. We cannot overcome that no single methodology has the perfect set of criteria relevant to culture assessment (Lenartowicz & Roth, 1999), but we can try to find the most suitable theory. We will here present four of the most used and well-known frameworks on culture (Tung & Verbeke, 2010) and then describe which we will choose as our basis and for what reason.

Hofstede

The first theory that will come to mind to most people is probably Hofstede's framework on cultural dimensions. It is the most famous, most often cited (Dahl, 2004) and most widely used work in this area (Soares, Farhangmehr, & Shoham, 2007). It is also the most comprehensive and robust in terms of the number of national cultures samples with its use of over 60,000 respondents from seventy countries (Soares, Farhangmehr, & Shoham, 2007). The framework originally had four dimensions and after an extensive study to eastern countries and a closer collaboration with researchers with an eastern background, Hofstede realized that a fifth dimension of long-term orientation should be introduced to complement his earlier framework (Hofstede, 2005) (Hofstede, 2001).

Hofstede's theory is still very often used to characterize a country. Because Hofstede's empirical work was done between 1967 and 1973 the most often heart critique is that the data is out-dated. However, it is commonly accepted that national cultural value systems are quite stable over time (Hofstede and Usunier, 1999 as quoted by (Soares, Farhangmehr, & Shoham, 2007)) and relative cultural differences should be extremely persistent (Soares, Farhangmehr, & Shoham, 2007); culture is regarded as a "quasi-equilibrium" (Hofstede, 2001, p. 11). Other criticisms on Hofstede state that there is a

shortage on dimensions and that his focus on IBM material reduces the value of the theory (Venaik & Brewer, 2008).

Trompenaars and Hampden-Turner

Hofstede is often considered to be the first to use dimensions to describe and compare different cultures. A lot of work has been done by other authors in the same manner since. Trompenaars and Hampden-Turner focused on the cultural dimensions of business executives (Dahl, 2004) and identified seven value orientations (Trompenaars & Hampden-Turner, 1997).

Two dimensions of the framework of Trompenaars and Hampden-Turner show a great likeness to dimensions of Hofstede's framework, while the other dimensions seem more focused on the visible behavioral aspect as a result of a value than on the value itself (Dahl, 2004). Hofstede showed great criticism regarding Trompenaars' work and argued that no validation to the dimensions was shown, that there were only two independent dimensions in the data, which were also the ones who correlated with his own dimensions and that Trompenaars' dimensions did not cover any aspects of national culture beyond his own work (Hofstede, 2001). It can of course be questioned whether Hofstede is a neutral source of commentary, but other than his, little (positive or negative) critique has been expressed towards Trompenaars' framework. The most important difference between the two frameworks is that Hofstede's work is based on a questionnaire on work values, while Trompenaars' asked respondents for preferred behavior in different situations; however, they both focus on an ultimate goal state and overall there the two frameworks are very similar and have the same advantages and disadvantages (Dahl, 2004).

Schwartz

Schwartz distinguished ten distinct value types at an individual-level analysis and seven dimensions on the culture-level on the basis of his data of more than 60,000 individuals from 63 countries. Schwartz Value Inventory might at first sight seem to have the same approach as Hofstede and Trompenaars. However, it has a different basis: Schwartz did not ask for preferences to certain situations, but asked respondents to assess 57 values as to how important they felt these values are as "guiding principles of one's life" (for the following Schwartz, 1994, cited by Dahl, 2004). This difference in approach leads to the

advantage that the chance that a specific current situation ('situational variable') has a big impact on the way the participant fills in the questionnaire is lower. A disadvantage is, however, that a respondent may feel inclined to choose a more utopian answer which might not reflect his actual behavior. Another difference is that Schwartz explicitly separates values on individual- and culture-level, while Hofstede does not. There has been little other criticism in literature towards Schwartz theory, which might both be because of its different approach when compared to Hofstede and because it is less well-known than earlier mentioned frameworks.

GLOBE

In the mid 1990's House conducted his GLOBE research, by collecting data from more than 17,000 middle managers from 62 countries or regions (for the following, House et al., 2004, cited by Venaik & Brewer, 2008). House worked in a similar manner as Hofstede and developed nine cultural dimensions. These dimensions differ from Hofstede's dimensions, although some show similarities. The biggest difference with Hofstede's work is that the GLOBE study separately measures two distinct aspects of national culture, the practices and the values, for each of the dimensions (Venaik & Brewer, 2008). Practice is what is the current state ('as is') and values resemble what is the wanted state ('should be'). This separation leads to a total of 18 culture scores per country.

As with Trompenaars' framework, Hofstede showed great criticism towards the GLOBE research. He analyzed the new framework and stated amongst others that the framework was too complex, with factors that would convey hidden meanings not even understood by the researchers themselves and that after reducing the GLOBE dimensions the framework resembled his own dimensions and had no further contribution to the field (Hofstede, 2006). However, this commentary has again been discussed by Javidan, House et al. (2006) by which most of Hofstede's criticism was refuted. Venaik and Brewer (2008) compared the GLOBE framework and Hofstede's framework and concluded that while both frameworks have a dimension called 'uncertainty avoidance' these represent two entirely opposite concepts. Within the GLOBE framework, they also found a counter-intuitive negative correlation between uncertainty avoidance practices and values, for which the framework does not provide a compelling rationale.

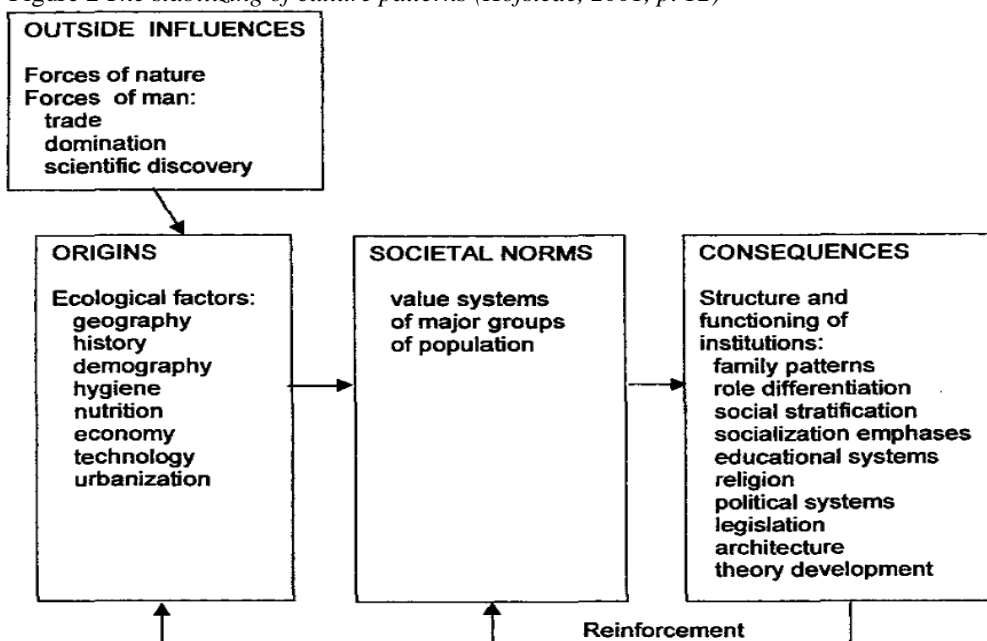
Choosing a framework

It is impossible to choose one ‘best’ framework because each has gathered its own criticisms and dimensions are not an objective truth; “Dimensions should not be reified. They do not ‘exist’ in a tangible sense. They are constructs (...). If they exist, it is in our minds - we have defined them into existence. They should help us in understanding and handling the complex reality of our social world.” (Hofstede, 2006, pp. 894-895) It might be for this reason - there is not one visible truth and the frameworks are not mutually exclusive - that authors, with the exception of Hofstede, seem to be reluctant criticizing the different frameworks.

There are two reasons to choose Hofstede’s work as the basis for our hypotheses:

1. The main criticism towards Hofstede is that there is a shortage on dimensions and that his focus on IBM material reduces the value of the theory (Venaik & Brewer, 2008). Both of these arguments have not been adequately resolved by other writers without gathering other disadvantages. Another often heard critique is that the data Hofstede used is now outdated. This is refuted by earlier mentioned authors and Hofstede himself. In figure 2 is graphically depicted how, following Hofstede, outside influences only have a very slow and late response in a country’s culture.
2. Hofstede’s work is the most comprehensive, most used and most often cited work in the field (Dahl, 2004) (Soares, Farhangmehr, & Shoham, 2007).

Figure 2 *The stabilizing of culture patterns (Hofstede, 2001, p. 12)*



2.3 Formulation of hypotheses

On this basis of previous extensive literature research, we want to formulate hypotheses regarding the link between the American culture, following Hofstede, and the use of the theory on effectuation. The first step is to search for dimensions that could be linked to effectuation or causation usage. As discussed, Hofstede's framework will be used and therefore we will describe Hofstede's dimensions in more detail and per dimension describe possible links with effectuation or causation.

2.3.1. Hofstede's dimensions linked with the theory of effectuation

Power Distance

Power Distance is "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" (Hofstede, 2001, p. 98). With every dimension, Hofstede describes values, specifics, connotations, origins, and differences between a high and low index score on that dimension. For the dimension of Power Distance, none of these descriptions match with any of the features of effectuation or causation as provided by Sarasvathy (2001a) (and described in section 2.2) and for that reason, we cannot use this dimension to formulate hypotheses.

Masculinity

"Masculinity stands for a society in which social gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life" (Hofstede, 2001, p. 297). The same goes for this dimension as for power distance: neither a relationship can be found to effectuation, nor to causation and with that it is not possible to use it as a basis for hypotheses.

Long Term Orientation

Hofstede's definition of Long Term Orientation is "Long Term Orientation stands for the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, Short Term Orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of 'face'

and fulfilling social obligations” (Hofstede, 2001, p. 359). Hofstede’s last added dimension could present a possible link to effectuation: A connotation of the difference between a low and a high LTO is: “Personal steadiness and stability” (low LTO) versus “Personal adaptability” (high LTO) (Hofstede, 2001, p. 360). This could be related to the adapting element of effectuation - “Leveraging as opposed to avoiding contingencies” (Dew, Read, Sarasvathy, & Wiltbank, 2009), because when one is aiming for personal steadiness and stability, it is imperative that he will try to avoid contingencies, while when one is adaptable, he is more likely to leverage contingencies. While there could be a potential link, it is weak and does not provide enough tangents between culture and effectuation to be fully applicable for the formulation of hypotheses.

Uncertainty Avoidance

Hofstede defines Uncertainty Avoidance as “the extent to which the members of a culture feel threatened by uncertain or unknown situations” (Hofstede, 2001, p. 161). Uncertainty Avoidance Index promises a stronger and more apparent link than the earlier described dimensions: some aspects of a low UAI are: “less resistance to change” (Hofstede, 2001, p. 160), uncertainty accepted instead of seen as a treat (Hofstede, 2001), “willing to live day to day” (Hofstede, 2001, p. 181) and a “preference for tasks with uncertain outcomes, calculated risks, and requiring problem solving” (Hofstede, 2001, p. 169). These are typically ways to describe an effectual approach and they certainly correspond to most of the aspects of effectuation: means-drive, non-predictive and leveraging contingencies. A high UAI corresponds more with causation, by for instance the “preference for tasks with sure outcomes, no risks, and following instructions” (Hofstede, 2001, p. 169).

These described links could be the basis of formulating hypotheses on how an effectual focus is affected by culture. However, the UAI of the United States of America is 46 (Hofstede, 2001), which is almost exactly in the middle of the spectrum. This means we cannot make any strong predictions, but only that American entrepreneurs will show a medium between the different aspects of effectuation and causation that are linked to uncertainty avoidance. Another important reason to not use this dimension is that there has been a lot of discussion on this particular dimension. Different studies using the same terminology appeared to use quite a different application of the term, which

questions whether the dimension is usable at all. It is shown that “in the case of the cultural dimension of UA, similar definitions across the two models [Hofstede and GLOBE] but major differences in operationalization have led to serious questions about the validity of research based on one or other of them” (Venaik & Brewer, 2010, p. 1310).

Individualism

“Individualism stands for a society in which the ties between individuals are loose: Everyone is expected to look after him/herself and her/his immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty” (Hofstede, 2001, p. 225). America shows the highest individualism index of all countries investigated by Hofstede: 91 (Hofstede, 2001). Individualism is also the most commonly applied construct to explain and predict cultural differences (Fischer, et al., 2009) and is the least controversial of Hofstede's dimensions (Hofstede, 2005). For these reasons, we will concentrate on this cultural dimension of individualism and investigate how this could be related to the theory of effectuation and the United States in particular.

Hofstede's dimension of individualism can be connected to effectuation and causation by one of the most apparent American cultural aspects: optimism. Optimism links the American culture and its high individualism (the independent variable) with the propensity for either effectuation or causation (the dependent variable). In the following of this chapter, we will first explain why optimism is a valuable addition to individualism and why this is typical for the American culture. We will then describe what could be the potential relation of optimism to the use of effectuation or causation by American entrepreneurs. This enables us to construct valuable hypotheses to conclude this chapter.

2.3.2. Individualism, optimism and America

“Optimists are people who tend to hold positive expectancies for their future; pessimists are people who tend to hold more negative expectations for the future” (Scheier, Carver, & Bridges, 1994) is the most commonly used definition of optimism. First indication that optimism is an aspect of the dimension of individualism can be found in Hofstede's

research on individualism: A feature of high individuality is: “Emotional expression of happiness encouraged, sadness discouraged.” For more collectivistic countries, the characteristic is: “Emotional expression of sadness encouraged, happiness discouraged” (Hofstede, 2001, p. 236). America has, as said, the highest individualism index, 91, which might be one of the reasons that Americans seem this optimistic.

This first notion that optimism is associated to individualism and apparent in America was reinforced by a research done by Fischer and Chalmers (2008). They conducted a meta-analysis of reported mean levels that either used the Life Optimism Test (LOT) or the revised Life Optimism Test (LOT-R), as devised by Scheier (see 3.3). Fischer and Chalmers statistically combined the results of 213 studies, which combined to 89,138 participants across 22 countries, to provide an overall answer to their research question: Are there cultural differences in reported means for the optimism test and how could such differences be explained? The effects of cultural variability they found, covaried in a systematic way with societal-level values, supporting the view that optimism is associated with certain cultural dimensions. In line with their predictions, higher individualism was associated with higher optimism: the regression explained a statistically significant 20.79% of the variance in levels of optimism. Their rationale for this outcome, that a less individualistic culture produces less optimistic members, is that “individuals with more interdependent selves have an interpersonal orientation (indicating a collective orientation), which in turn leads to higher modesty and self-effacement” (Fischer & Chalmers, 2008, p. 379).

That optimism is a characteristic factor of the United States is not only to reason from the individualism top score, it also becomes clear in other literature on the American culture. Held (2002) describes in *The Tyranny of the Positive Attitude in America* how (forced) optimism can be of big influence on the American daily life and that this for example is the main cause of the popularity of self-help books. He also shows how in America ‘positive psychology’ (focused on optimism) is getting increasingly popular. Rose et al. (2008) found how students in the United States are more unrealistically optimistic than Japanese students. Michaelos (1987) describes an optimism test in which people expressed their feelings about next year, for more than a decade. Here the United States scores as one of the most optimistic countries as well. Also from the

earlier mentioned research done by Fischer & Chalmers (2008) America came out as one of the most optimistic countries.

Although most people overall are optimistic, but in varying degrees (Carver, Scheier, & Segerstrom, 2010), it becomes apparent that there is evidence the American people seem indeed more optimistic. In popular literature, the American optimism has gotten a lot of attention as well. Bloomberg Business Week Magazine (2009) dedicated an issue fully to ‘the case for optimism’, with statements as “Yes, we have been down and out before this current economic crisis hit us. And it was optimism and hope—often irrational, always American—that got us going again.” (Reeves, 2009), a lot of polls proving how optimistic Americans are (25% of the Americans expect success because they are optimistic and 59% because “I’m intelligent and work hard, so I should succeed.” (Zogby, 2009)) and conclusions on ‘their optimism’ such as “Is that infallible or even rational? Maybe not. But it is American.” (Reeves, 2009). This kind of literature proves how optimistic Americans are (or supposed to be?).

For entrepreneurs, this optimism could also be of major influence: ‘the American dream’ is the use of freedom to start for oneself and to create one’s own future.

It can be expected that this is one of the reasons some student entrepreneurs start their own business: optimism towards the future of their company and trying to fulfill the American dream. That optimism is partly responsible for the popularity of entrepreneurship in America, is for example also said in *Optimism and chance* (Storey, 2011): “Following De Meza (2002), we assume that optimistic individuals are attracted by some form of entrepreneurship, self-employment or business ownership. This is because it is a risky income-earning opportunity in which the small number of individuals who are successful become extremely rich (Hurst and Lusardi, 2004), but also where the act of gambling is one from which the individual derives utility” (Storey, 2011, p. 312). He compares “the fear or stigma of failure which allegedly characterizes Europeans, with the ‘can-do’ attitude of Americans” (Storey, 2011, p. 315).

2.3.3. Optimism and the theory of effectuation

Now that optimism is indicated as an important characteristic of the American culture and the link with individualism is clear, we have to link it with effectuation/causation and its elements. This is not only useful to construct hypotheses; it is interesting as well

because of several reasons. The most important one is to be able to further map the behavior of (student) entrepreneurs. More knowledge on entrepreneurial processes is valuable for multiple reasons, as discussed in chapter 1. Furthermore, there is a lot of uncertainty surrounding the link between optimism and entrepreneurship: It appears that there are no objective reasons that lead to entrepreneurial optimism (Cooper, Woo, & Dunkelberg, 1988) and it is unclear whether optimistic entrepreneurs are more successful (Manove, 2000), but most evidence suggests that moderately optimistic entrepreneurs have the best odds (Hmieleski & Baron, 2009). There is even less known about the influence of optimism on entrepreneurial processes (instead of the performance of entrepreneurs). By involving the dimension of optimism in our research, we contribute to this field of research as well, in which much is yet to discover about the link between optimism and the way in which entrepreneurs behave.

Effectuation and optimism

Optimism can be linked to individualism and this might be a reason that Americans seem very optimistic. This optimism also influences how people confront problems (Carver, Scheier, & Segerstrom, 2010). We expect this optimism will influence the entrepreneurial processes as well and the question remains how optimism could be linked to effectuation or causation. There are several papers about the effect of optimism/pessimism on the popularity of entrepreneurship and entrepreneurial processes, but none has yet researched the possible link between effectuation and optimism.

The only published research that is somewhat related to the proposed link, is done by Goel and Karri (2006). Their research is on the possible link between effectuation and ‘over-trust’. This concept could be an outcome or effect of optimism and also influences entrepreneurial processes, but it is not the same. As they state: “Over-trust reflects a condition where one chooses, either consciously or habitually, to trust another more than is warranted by an objective assessment of the situation” (Pierce (2005), cited by Goel & Karri (2006) p. 479). They suggest multiple reasons why over-trust could be related with effectuation, for instance because they would view trust as ‘non-controllable’ (as they see the future) and therefore not try to predict the outcome. After the authors have discussed such propositions, they conclude that it is up to future researchers to focus on whether effectual processes might lead to over-trust as they

predict. Although their propositions show tangents with optimism, because they are not adequately tested and are not related close enough, they are not useful for making the actual hypotheses.

To actually establish hypotheses on the relation between effectuation and optimism, we have to look at the definitions of both aspects and what their terminology entails. We will discuss the possible relationship between individualism and effectuation or causation per element of effectuation as formulated by Sarasvathy.

Means driven as opposed to goal driven

Effectual entrepreneurs focus on their means at hand and on what they can achieve with that. Causal-thinking entrepreneurs set goals for themselves and will gather the means to achieve those goals accordingly (Sarasvathy, 2001b). Carver et al. (2010) regard persistent goal behavior as typical optimistic behavior and as one of the main characterizations of optimism: “We have characterized optimists as being persistent in trying to reach goals and pessimists as less persistent and more likely to give up” (Carver, Scheier, & Segerstrom, 2010, p. 883) They state that optimists should tend to be confident and persistent in the face of diverse challenges, even when progress is difficult, while pessimists in the same situations would be doubtful and hesitant. “Such differences in how people confront adversity have implications for success in completing goal-directed behavior.” (Carver, Scheier, & Segerstrom, 2010, p. 880)

Rasmussen et al. (2006) further investigated this possible relationship between goal-reevaluation and optimism and gathered varying results. Their results indicate that optimists, compared to pessimists, have the ability to reengage in new activities when valuable goals have become unattainable. With these results, it is hard to draw clear conclusions as to which hypotheses to make. It is unclear whether optimists find it easier to re-evaluate their goals than pessimists. What seems to be apparent, however, is that pessimists are better in completely dismissing their goals. Optimists seem to be more focused on goals and may change them as they go, while lesser optimists do not seem to be that concerned with goals at all, as they are more hesitant in whether goals are achievable anyway. Therefore we formulate two hypotheses:

H1a: Entrepreneurs with high optimism are driven by goals.

H1b: Entrepreneurs with low optimism are driven by means.

These might seem equivalent, but they are not. This is because it might for instance be possible that if we analyze the absolute number of statements per category (which we will do, although we will take the relative number as basis) it appears the entrepreneurs with higher optimism are both more goals driven and more means driven or that entrepreneurs with low optimism are more means driven but not less goals driven. Because these might be interesting results, we test for both hypotheses per category.

Non-predictive as opposed to predictive control

In regard to this concept, Sarasvathy (2001a), defines: “If the decision makers believe they are dealing with a measurable or relatively predictable future, they will tend to do some systematic information gathering and invest some effort on a reasonable analysis of that information, within certain bounds. Similarly, if they believe they are dealing with relatively unpredictable phenomena, they will try to gather information through experimental and iterative learning techniques aimed at first discovering the underlying distribution of the future” (p. 252). Effectual entrepreneurs believe that the future is not just out there to be discovered, but it gets created by the strategies of the players themselves (Sarasvathy, 2001b).

Scheier’s definition of optimism states that optimists hold more positive expectancies for the future than pessimists. If somebody expects the future to be bright, it seems logical that he will not try to predict it as much as somebody who is not as sure that his future will be positive. If this is true, optimists will be not so much bothered with predictive control, but will be more concerned with non-predictive elements. Pessimists on the other hand, will try to predict the future and control that future. This is also linked to the statement “To the extent that we can control the future, we do not need to predict it” (p.252) Sarasvathy (2001a) linked to effectuation. Again, at first sight it would be logical to say someone who has a standard optimistic disposition is more drawn to a statement like this, than someone who is more pessimistic and would articulate the dangers the future could bring. The statement that is associated with the latter is “To the extent that we can predict the future, we can control it” (Sarasvathy, 2001a, p. 252).

H2a: Entrepreneurs with high optimism focus on non-predictive control.

H2b: Entrepreneurs with low optimism focus on predictive control.

Affordable loss as opposed to expected return

Entrepreneurs who are driven by effectuation focus on what can be lost instead of what can be won (Sarasvathy, 2001a). If you focus on what can be won and not so much as what can be lost, this sounds very optimistic. As Scheier's definition of optimism states, optimists hold more positive expectancies for the future. When somebody views the future as positive and expects big rewards, he might forget what could be lost. The other way around, people who hold more negative expectancies for the future, might not focus on what will be gained, but what will be lost if everything turns out in the worst case. For this reason, the hypotheses in regard to this concept of effectuation are:

H3a: Entrepreneurs with high optimism focus on expected returns.

H3b: Entrepreneurs with low optimism focus on affordable loss.

Partnerships as opposed to analysing competition

Effectual entrepreneurs will focus on building strategic partnerships from their start, while causal thinkers are perceived to be more focused on competition (Sarasvathy, 2001a). It seems that there might be a relationship with Hofstede's dimension of individualism itself, following Hofstede's concepts of individualism: Aspects of a low individualism that could be linked to this element of effectuation are "Knowing the right people most important for career" (Hofstede, 2001, p. 226) and "Entrepreneurs claim contribution of others to their results" as opposed to "Entrepreneurs claim own results without depending on others" (Hofstede, 2001, p. 244). Because of these concepts, it seems logical that people in cultures with low individualism (high collectivism) will concentrate on partnerships, while people from cultures with high individualism will be analyzing their competitors. As was explained, this individualism can be linked with optimism, which suggests that high optimism is linked via high individualism with a focus on potential partnerships and vice versa:

H4a: Entrepreneurs with high optimism focus on potential partnerships.

H4b: Entrepreneurs with low optimism focus on potential competition.

Leveraging as opposed to avoiding contingencies

A metaphor to explain the difference between causation- and effectuation-based entrepreneurs is based on a pot of marbles (Sarasvathy, 2001a) (Sarasvathy, 2001b). It focuses on the difference between risk and uncertainty: Risk is compared to a game involving an urn containing five green balls and five red balls. Whoever draws a red ball is awarded a prize of 50 euro. One can now precisely calculate the expected return, because the distribution is given. Uncertainty is compared to the same game, except that one does not know how many balls there are in the urn, which color they have, or if there are even any balls at all. The first urn would call for a statistical approach, while the second one would call for estimation techniques (Sarasvathy, 2001a). It is suggested that causation is more drawn to the first urn and effectuation to the second (unknown) urn (Chandler, DeTienne, McKelvie, & Mumford, 2011). Sarasvathy gives an example of a rationale for choosing the latter urn:

“I do not care what color the balls are in the urn or what their underlying distribution is. If I am playing a game where drawing a red ball wins \$50, I will go acquire red balls and put them in the urn. I will also look for other people who have red balls and induce them to put them in the urn and play the game as my partners. As time goes by, there will be so many red balls in the distribution as to make almost every draw a red ball. Furthermore, if neither I nor my acquaintances have red balls, but only green ones, we will put enough of them in the urn so as to make the original game obsolete and create a new game where green balls win.” (Sarasvathy, 2001a, p. 252)

This way of leveraging contingencies sounds very optimistic and this link is also confirmed by Carver et al. (2010), who conclude that optimists respond to difficulty and adversity in more adaptive ways than more pessimistic people. The hypotheses therefore are:

H5a: Entrepreneurs with high optimism focus on leveraging contingencies.

H5b: Entrepreneurs with low optimism focus on avoiding contingencies.

We will discuss and conclude these hypotheses in chapter 5. Furthermore, we will analyze the results of the optimism test in relation to effectuation as a whole and also whether American student entrepreneurs show a clear tendency to either effectuation or causation as a whole.

2.4 Conclusion

In this chapter, the literature on effectuation and culture has been discussed. Hofstede's individualism dimension is chosen as focus for literature and optimism, an important aspect of the American culture, is brought in relation to this dimension. With these aspects, we have formulated hypotheses in regard to the relationship between Sarasvathy's theory on effectuation and the American culture. The link between concepts of effectuation and causation to optimism leads to the hypotheses that American optimists will be focused on analyzing competition (c)¹, non-predictive control (e), expected returns (c), leveraging contingencies (e) and to be mainly goal-driven (c) because these categories are positively correlated with optimism.

¹ c stands for a causal element; e stands for an effectual element

3. Methodology

In this chapter the way the study is conducted will be explained. The research consists of a combination of a business case and an additional interview and questionnaire. The business case is performed by the student entrepreneur using the ‘think aloud’ procedure, to be able for the researcher to fully register every idea, assumption and manner the interviewee uses in the decision-making process, as will be explained in section 3.1. In section 3.2 additional questionnaires will be described, which were used to confirm the results from the business case and to gather additional data. Section 3.3 discusses the way the results will be analyzed in chapter 4, after which the chapter is concluded by addressing the validity of the research.

3.1 Think Aloud research

The main research of this thesis was the gathering of protocols by means of the Think Aloud Procedure. Therefore a business case was presented to a research sample of 15 student entrepreneurs.

3.1.1 Research sample

The research sample consists of 15 American student entrepreneurs. The term student entrepreneur means that they are all still studying while having their own business, or that they started their business while they were a student and have now graduated and continued their business. The entrepreneurs’ ages are between 20 and 30. These 15 entrepreneurs were born in America and only one person had international experience of more than one year. Of the 15 student entrepreneurs, two were female.

Some of the entrepreneurs were found by contacting entrepreneurial organizations, while others were contacted by the help of local students from Berkeley. Initially 19 student entrepreneurs were interviewed, but after specification of the cultural requirements, stating that the entrepreneurs had to be born in the United States, 15 protocols were used as a basis for analysis. This leads to a very diverse group with very different businesses: from online services, to fruit delivery, to house painting, to fashion. An important aspect all entrepreneurs had in common was that their business was settled in ‘Silicon Valley’ (an entrepreneurship-heavy area between San Jose and San Francisco, California, which was also where they were interviewed) or that their

business was currently managed from Silicon Valley. Since Silicon Valley is a very specific area for entrepreneurs - there are for instance a lot of incubators and venture capitalists - this similarity between the participants is important. This might also lead to a certain 'Silicon Valley bias', which makes comparing the differences and relations that appear from our research more valuable, since they have better comparable 'starting biases'.

Dew et al. (2009) argued that a random sample of novice entrepreneurs would have two sources of variation that have to be kept in mind: one from the lack of basic business knowledge and one from the lack of entrepreneurial expertise. In our research sample, the first source seems not to be present, because no participant studied an MBA or another study program that is concerned with management, entrepreneurship or business administration. The second potential source of variation, differences in entrepreneurial expertise, could be of influence on the results, because the most experienced entrepreneur had been busy for five years in her company and the less experienced had just begun. However, there were only two entrepreneurs who had been busy in their company for more than 1.5 years (one for four year, one for five years). The other companies were started in 2011 or later or had only been in existence for less than 1.5 years. Because two entrepreneurs are too small of a group to test against the rest, we cannot analyze for any results considering this influence.

3.1.2 Think aloud case

The main results from our data research are 'think aloud' protocols that are produced by letting the student entrepreneur conduct a business case. The business case that is used to be able to see entrepreneurial decision making, consists of a 10 year run of an imaginary coffee corner. At the different stages, a little description is given of the situation, with sometimes some additional data, for instance on the market or on future projections. In this way, the participants had certain directives, but had all freedom to formulate their own answer. The entrepreneur had a lot of room for different strategies and ways of going through the business case, as the diverse results proved. The case design is partly based on the one that is constructed by Sarasvathy (2008) and Dew et al. (2009) and can be found in appendix 1.

The case is performed by thinking aloud. This kind of research has been proven to correctly represent the thought process the interviewee uses to make decisions. If you ask the subject after the task is completed what his thoughts were, he often appears to display an ideal situation. The thinking aloud procedure, however, makes sure that every step in the thought process during the case is accurately and concurrently shown (Ericsson & Simon, 1992). By asking the subjects to think aloud, one can look directly into the 'black box' of the decision-making process (Sarasvathy, 2003). We sometimes directly encountered this advantage of the think aloud procedure in our research. For instance, one of the participants expressed before the case that he just 'jumped into situations' and would not analyze his competitors or market. However, as the case proceeded he showed a high propensity to analyze the data that was given to him and to predict the future. His thought process appeared different from what he expected himself and by conducting our research in this way we could get the real results.

The think aloud session began with a little warm-up exercise in which the participant was asked to count the number of windows in the house of their parents. This exercise gives the entrepreneurs the ability to practice the think aloud procedure and the researchers the chance to give any last instructions if the participant appears to not be verbalizing all his or her thoughts (Somerén, Barnard, & Sandberg, 1994). After this short exercise, all entrepreneurs were able to 'think aloud' properly and the actual business case could begin.

The role of the researcher during the business case was a very small one. The participant was encouraged to act as if the researcher was not in the room and in this way not let the expression of thoughts be influenced by the researcher. The sole purpose of the interviewer was to make sure that the participants kept thinking aloud, by encouraging the entrepreneurs if their talking had stopped, and that any important ambiguities were solved. When entrepreneurs had questions during the case, they were encouraged to interpret the case themselves as not be influenced by the way the interviewer answered the question. When this was not enough to proceed, the interviewer gave a short and objective answer as possible. The sessions were held in different locations, but there always was a quiet atmosphere which helped the participant to properly concentrate and not bother other people with their talking.

Interview questions after the case

After the think aloud business case, the entrepreneurs answered eight questions to evaluate their thoughts about the case and check if they had the feeling they had been properly able to express their thoughts or that they had wanted to do things differently. With these questions, it was confirmed that the entrepreneurs had been able to express their thoughts properly and completely and would not have done anything differently if they would had to do the case again. Most of the participants even expressed that they thought this way of conducting a business case, by thinking aloud, was fun and instructive. Some mentioned unclear questions, but they had never encountered situations in which they could not proceed. As instructed, they had used assumptions to overcome any ambiguities. The think aloud sessions took between 45 minutes and one hour and 45 minutes and all subjects confirmed they had enough time to finish the business case.

Transcribing and coding

With the results from the think aloud case, every session's audio recording was transcribed and coded. Transcribing was done fully literally, to prevent the danger of personal interpretation by the researcher. This procedure results in a full transcript of all thoughts the entrepreneur had during the business case. Coding is done by use of the table below and by checking the number of times the different statements are made. In this way, quantitative analysis can be performed. Per business case a scheme is made with the results of this coding. Next to every assigned letter, a few keywords are placed to make later reference easier. This coding scheme is used in the whole EPICC Project and was based on Sarasvathy's (2008) research:

Causal	Effectual
G - Goal-drive	M - Means-based
R - Expected returns	L - Affordable loss
B - Competitive analysis	A - Use of alliances or partnerships
K - Existing market knowledge	E - Exploration of contingency
P - Predictions of the future	C - Non-predictive control
Z - Emphasis on analysis of data	D - Distrusting or opposing (marketing) research
X - Causal (no subcategory given)	N - Effectual (no subcategory given)

Existing market knowledge (K) and exploration of contingencies (E) are set as opposites of each other. This follows from Sarasvathy (2001a): As one of the aspects of effectuation, she explains that causation models are more suited if pre-existing knowledge is seen as a source of competitive advantage, while effectuation could be better for exploring and exploiting contingencies that arise unexpectedly.

Furthermore, the ‘emphasis on analysis of data’ and ‘distrusting or opposing research data’ categories were included because Sarasvathy (2008) mentions them as aspects that emerged when she began testing effectuation between novice and expert entrepreneurs. This category is also connected to other categories: market research can be used for predictive control and analyzing expected returns (Sarasvathy, 2008). For this reason and because Sarasvathy did not include it in the main five aspects of effectuation, we did not formulate hypotheses in regard to this category. It will however be included in the concept of ‘effectuation’ as a whole.

The ‘no subcategory given’ categories were included to be able to take into account any statements that are effectual or causal but cannot be directly linked to any of the other categories. This sub category is only applicable in exceptional cases, because a statement should fall in one of the categories to be effectual or causal. These exceptions are for instance when somebody states an aversion of a certain category (‘I am not looking for partnerships’) or when somebody states an overall effectual approach (‘I want to stay dynamic and keep options open’).

With this coding scheme, all protocols were assessed and every statement was researched. As an example of how coding can sometimes generate multiple valuable statements per phrase, one participant stated in the product development state of the business case:

“I would look and basically say: where is the market going, are people like... is there a recession, maybe low-end coffee is the solution for now, we can transition to high-end. If it looks like people are starting to really like specialized coffee and that's what the industry is going, then we just offer specialized coffee. I would just try and determine like a trend in the market and just see exactly where it's going and where people are gonna be spending their money in the future and how we can maximize revenue long-term.”

In these sentences, three statements are made that can be coded along the coding scheme:

1. Responding to a possible recession is the exploration of a contingency (effectuation).
2. Determining a trend in the market points at predictive control (causation).
3. Maximizing the revenue in the long term refers to a focus on expected returns (causation).

In this way, a lot of information can be gathered from all the protocols which leads to clear pictures of the participants and their way of thinking in the different categories. After all 15 interviews were coded, every coding was revisited as to make sure they were all done in the same way.

3.2 Operationalization

To measure the different elements of the research question, the used questionnaires will be described and can be found in appendix 2.

3.2.1 Questionnaire considering the entrepreneur's company

To analyze whether the entrepreneur was more effectual or causal, not only the think aloud protocols are used, but an additional questionnaire as well, which regarded his or her own company. In this way, we examined whether the entrepreneur used the same level of effectuation or causation in the startup of his own company as he expressed in his thoughts during the case. Analyzing the outcomes of these questionnaires results in a clearer picture about the test subject using an effectuation or causation-based approach in real-life situations as well as he did in the case.

The questionnaire to measure this use of effectuation or causation when setting up the entrepreneur's business has been constructed by Chandler et al. (2011). After analyzing 35 interviews with entrepreneurs, they had two researchers analyze certain words and phrases that were consistent with either the causation or effectuation construct. After that, they designed the questionnaire that sought to capture the Sarasvathy's causation and effectuation constructs in terms used by entrepreneurs in their responses in the interviews. In this way, 17 questions were set up. The authors validated this questionnaire statistically by using two samples and 111 respondents. The questionnaire will give a clear outcome about the use of causation/effectuation in the start-up of the company (Chandler, DeTienne, McKelvie, & Mumford, 2011). The questions of the questionnaire can be found in appendix 2.1.

3.2.2 Life Optimism Test

To test the hypotheses, we want to know two things of the entrepreneur: in which extent he is effectuation or causation-based and in which extent he is optimistic. The first we can investigate with earlier discussed coding and questionnaire. For the latter, we have used an additional questionnaire, the Life Optimism Test, also known as the Life Orientation Test (LOT). It is described in Goodman et al. (1997), who used it to measure optimism among mid-adolescent in an adolescent medicine clinic. They validated it to have a good-retest reliability and internal consistency. Scheier et al. (1994) revised the test and shortened it, after which they validated it with 4,309 undergraduates to have an acceptable level of internal consistency and to be fairly stable across time. This last research used a much larger research group, who are more near to the age of our own research group and the revised Life Optimism Test (LOT-R) is the most frequently used measure of dispositional optimism (Herzberg, Glaesmer, & Hoyer, 2006). For these reasons, we will use the revised LOT-R to measure optimism across the entrepreneurs. This test can be found in appendix 2.2. The sum of the score for the questions can lead to a minimum score of 0 and a maximum score of 24.

One issue that has to be remarked is that there has been controversy about whether optimism is a bipolar dimension, or whether there are two different dimensions: optimism and pessimism (Carver, Scheier, & Segerstrom, 2010). This debate has not yet been concluded and different tests on this subject have gathered different results. Because the revised LOT, as described above, has gathered the most reliable results and is most used, we will use this to measure optimism as a bipolar dimension.

3.3 Method of analysis

The data the research methods (described above) provide have to be analyzed to be able to draw conclusions to the hypotheses. The hypotheses are about relationships between categories and we also want to test whether the differences between the numbers of statement in opposing categories are significant and in that way give more results about the research sample. An important specification of the data (all codings and outcome of questionnaires) is that it is distributed according a ratio scale, because there is a linear and comparable difference between different values in the scales and because there is a natural zero value. This feature entails we can use regression and correlation analysis to

analyze any possible relationships between variables (such as optimism and effectual or causal categories). Another important specification is that the data from the LOT-R is discrete, since it can only take integers between 0 and 24 (see 3.2.2). Furthermore the number of statements in a category is discrete as well, since someone can only express an integer number of statements.

To test the correlations of the different variables - the coding elements of effectuation and causation and the score for optimism - we use a Spearman rank correlation table. For the use of Pearson's correlation coefficient, which is often seen as standard for correlation statistics, a normal distribution is required (for the following, Huizingh, 2010). The relative differences between the categories are normally distributed, but since the LOT-R outcome is not and we want to compare these two elements, we cannot use Pearson's correlation and will use Spearman's. While this is a good alternative, the main difference between these two tests is that Spearman's calculates the correlation on basis of rank order and Pearson's on basis of the observations itself (Huizingh, 2010). This means that the data is ranked from 1 to 15 (because of 15 participants; equal numbers' ranks are averaged) and these ranks are correlated with the optimism scores, which are also ranked. In this way, the figures are basically transformed to ordinal numbers. The biggest difference this ranking brings is that in this way outliers and absolute differences have less influence than in Pearson's test for correlation.

To test the correlations for every category, we have calculated the percentage one of the two opposing categories was mentioned, which results in relative numbers per category. These relative numbers are used as a basis for the evaluation of the hypotheses and not absolute numbers, because the latter might give a distorted image of the results. This is because there was a big difference in the total amount of coded expressed statements (participants varied from 26 to 58 statements, with a mean of 37 codings) and also in the number of words verbalized during the case (varying from 3,230 to 8,353). However, whenever these absolute numbers give interesting results, we have mentioned this.

To test differences between the elements of effectuation and causation, we want to analyze whether the variation between the numbers of times the two opposing elements of the categories are mentioned is significant. To do this, the Mann-Whitney U Test was used. We cannot apply T Tests (seen as standard) because to use these normality is a

requirement and, as explained, the number of statements is discrete from which follows that it is not normally distributed (Huizingh, 2010). Just as Spearman's test does for correlations, the Mann-Whitney U Test overcomes the problem of a not-normal distribution by ranking the cases and testing whether there are significant differences between the ranks. We tested the opposing categories (for instance a focus on expected returns and focus on affordable loss) as independent samples, because the results for these categories are assumed to not dependent on each other: the result in one category can be the same, or completely different from the opposing category.

The results for these tests can be found in chapter 4 and will be further discussed in chapter 5.

3.4 Validity

In this paragraph the validity of our research will be assessed; we will discuss the factors that make that the findings from our research could be less or more valuable and how we handled the many threats to validity. We will also discuss the validity of the theory on effectuation, because the concept of effectuation is such an important part of our research.

There are two ways in which an experiment should be assessed on validity:

1. An experiment is deemed to possess internal validity if the obtained results are due only to the manipulated independent variable.
2. An experiment is deemed to possess external validity if the obtained results are generalizable to groups, environments and contexts outside of the experimental settings (Onwuegbuzie, 2000).

Validity will be discussed by means of the framework of Onwuegbuzie (2000) who combined several studies on validity, focusing on providing a framework applicable for all quantitative research studies, and the paper of Capbell and Stanley (1963), which is the most authoritative source regarding validity threats (Onwuegbuzie, 2000). We only present the twelve factors that are applicable to (the nature of) our research and will discuss what was done to minimize their influence. A part of the threats for validity are not applicable for our research because:

1. We did not work with multiple groups, but with fifteen separate individuals and also only with one researcher.
2. Our research does not focus on performance at a certain subject: we measured how the participants acted and not how 'good'.
3. There was only one test session per participant and we did not follow them for a longer period of time or during multiple studies.

3.4.1 Internal validity

One of the factors that may jeopardize internal validity is *reactive arrangements*, as described by Onwuegbuzie (2000). This means that internal validity may be threatened because the participants are aware they are participating in a research investigation. To minimize the threat for the validity of our research, the introduction in our think aloud business case explicitly stated that the participant should verbalize his thoughts immediate and without any explaining or summarizing towards the observer. Moreover, he should act as if the observer was not there. Within this threat, the *novelty effect* is explained. This might be in effect because participants may act differently when they are performing a novel task (thinking aloud in this case). We tried to prevent this having an effect by first doing the warm-up exercise, as explained in 3.1. In this way, when the participants started the case, the thinking aloud method was not a novelty anymore.

Although there was only one research session per participant, *maturation*, in which participants act different with time passing by, might have been a factor of influence as well (Campbell & Stanley, 1963): the sessions were about one and a half hours long and participants might grow tired or hungry during the session which might influence the data. To prevent for this threat to internal validity as best as possible, we made sure the participants had access to something to drink and eat. Furthermore we started by letting the participants execute the case and let them do the questionnaires afterwards, to make sure they were the least tired during the case itself, when it was most important to be in an alert status.

A small threat may be formed by *instrumentation*, which means that the calibration of a measuring instrument changes during the research process (Campbell & Stanley, 1963). While we did not use strict 'measuring instruments', it was very important to be consistent in marking the statements as one of the categories of effectuation or

causation. To be as consistent as possible, we continuously used the same list and did two rounds of marking the protocols. Because only one person coded the protocols, there was no chance for an *observational bias*, in which case a less than 100% *inter-rated reliability* would have threatened internal validity (Onwuegbuzie, 2000).

It might be a threat to internal validity if the researcher prefers one of the outcomes of the study and subconsciously transfers this preference to the participants, called *research bias* (Onwuegbuzie, 2000). In our study this might have happened if the researcher either preferred effectuation or causation. This was not the case and to make sure this ‘bias’ is no factor to the validity of the research, there was as little intervention as possible during the case, as explained in 3.1.

We will also consider our findings very carefully in the chapter 4 and 5; *Illusory correlation*, *confirmation bias*, or *effect size* (Onwuegbuzie, 2000) may occur when findings are not enough statistically researched, but are interpreted by the researcher directly, who then might be biased to find his hypotheses confirmed. For that reason we will use statistics to discuss the hypotheses, as explained to prevent from these threats, and also provide all statistical data in chapter 4.

3.4.2 External validity

As for most researches, a threat for external validity might be the selection of the participants (Campbell & Stanley, 1963). We discussed this already shortly in section 3.1.2. Important is that we did not use a pre-formed group of entrepreneurs. There could have been no influence between the entrepreneurs which could have resulted in influencing the outcomes of the think aloud session. There were three entrepreneurs who knew each other, but overall there was no sense of a group. Furthermore, we made sure that the participants were not part of the same organization or entrepreneurial institution: Some were part of the entrepreneurial organizations of Berkeley or Stanford and others were not involved in any such activities at all. In this way we were sure that there was no interference between the participants and we hope to have a group that is as representative for the American entrepreneurial community as possible.

This *representativeness* (Campbell & Stanley, 1963) is very important for the external validity, called *population validity* (Onwuegbuzie, 2000). It is, however, impossible to

be sure the results we found can be generalized for all student entrepreneurs in America, because of two factors:

1. It is impossible to interview all student entrepreneurs from the USA
2. It is impossible to have a completely random sample, because we had to find the entrepreneurs via organizations and locals and did not have a database with all student entrepreneurs of America in it (Onwuegbuzie, 2000).

These factors threaten external validity in nearly all studies (Onwuegbuzie, 2000). The research sample divided by the total population should be as large as possible to make the population validity as high as possible.

Furthermore, the external validity is threatened because it is impossible to see the participants free from their context of place and condition (*ecological validity*) and free from their time (*temporal validity*) (Onwuegbuzie, 2000). This first factor is very important, and will be later discussed in chapter 5.2, limitations. Temporal validity may be a lesser threat, because our study is on the influence of culture. As explained in chapter 2.2, Hofstede's model (2002) says culture it's a quasi-equilibrium, in which change happens very slowly. For that reason, our research should have temporal validity for multiple decennia at least.

Specificity of variables is a threat for external validity in almost every study. It refers to the fact that in most studies variables are very specific (specific people, location, time, circumstances, definitions) and the question arises whether the results are applicable to the 'real world' (Onwuegbuzie, 2000). In order to counter these threats the variables should be defined in a way that has a meaning outside the setting of the study. This is what we did in operationalizing the variables referring to effectuation and causation: we tried to link the thought situations Sarasvathy (2008) registered as happening in the real world to measurable statements in the 'laboratory'. This way of working should make sure that our outcome has a meaning in the real world and not just in our experiment setting.

We can conclude that the most serious threat for the validity of our research is the fact that it is very hard to generalize our findings to the full population of American student entrepreneurs. As for (almost) all researches, we have to be very careful making conclusions and can only indicate possible trends and relations and not be sure that they

are happening in the real world as well. The other threats were countered as adequate as possible, which should give our research both a relatively high internal and external validity.

3.4.3 Validation of effectuation theory

The effectuation literature provides a clear set of aspects that can be assigned to either one of the approaches (effectuation or causation). This does not mean that in reality these sets (as shown in paragraph 2.3) have to be just as clearly separated. Hence, it may for example be possible that a factor that positively influences the degree to which effectuation is used, also positively impacts the use of causation (Harms, not published yet). Therefore, hypotheses are formulated and analyses are performed separately for causation respectively effectuation. Chandler et al. (2011) tried to validate every aspect of effectuation (as mentioned in 2.1). All categories as conceptualized by Sarasvathy (2001a) were confirmed to clearly either belong to a causal mindset or an effectual one, except the partnership-focus one. They argue that pre-commitments in the form of partnerships or alliances may be important for both processes, but for different reasons: In the effectuation process, it allows firms to test markets without owning all the resources to do so (Sarasvathy, 2001b), while in the causations process, it could be part of a rational and logical strategy. This is something to keep in mind; that not only an effectual thinker is concerned with a focus on potential partnerships.

3.6 Conclusion

In this chapter, we have presented the way the research was conducted and have further explained and discussed the ‘think aloud’ method and the questionnaires considering the entrepreneur’s own company and his optimism. Furthermore, we have described our research sample of American student entrepreneurs and the validity of our research. Now that we have discussed how the research is conducted we can present and discuss our findings in the next two chapters.

4. Findings

In this chapter the data will be presented that was gathered by the procedure described in chapter 3. In this way, first results to the hypotheses are formulated. In chapter 5, these findings will be further discussed and conclusions will be made in regard to the hypotheses.

In chapter 3.3, we explained the used statistical tests. Here, we present tables of the findings that these tests provide and we end the chapter by providing more detailed figures per tested category. Next to these tested categories, there was a catch-all category for any other causal or effectual statements that did not fall within one of the other categories. This resulted in only one other causal and one other effectual statement and for that reason we will not test these categories separately. The two statements are added to the total causation and effectuation count.

4.1 Correlations

Spearman rank correlations between the different variables themselves and between the variables and the score for the optimism test were conducted. Below are the results, in bold are the correlations between the score for the LOT-R (optimism) test and the variables concerning causation and effectuation. As stated, we have measured relationships between both the relative differences between the categories (table 1) and the absolute results within each category (table 2). In chapter 3.3 was explained why Spearman's correlation test is used, with the main reason being that the scores for LOT-R optimism test are not normally dispersed but can only be integers between 0 and 24. The correlation coefficient in the table presents the found ranked correlation and the significance presents the calculated chance that the correlation was caused by chance. A correlation with a shown significance lower than 5% (which means that with this correlation coefficient found the chance there is no linear relationship is only 5% (Huizingh, 2010)) is regarded as statistically significant. The results from these tests will be presented per hypothesis in section 4.3 and will be discussed in relation to literature in chapter 5. Other significant correlations will be discussed in the 'other remarks' section in that chapter.

Table 1 *The correlations and significance of correlations between the percentage of opposing factors and the optimism score²*

Correlations

			Percentage competition analysis	Percentage goals driven	Percentage predictive control	Percentage expected returns	Percentage avoiding contingencies	Percentage emphasis on data	LOT-R optimism score
Spearman's rho	Percentage competition analysis	Correlation Coefficient	1,000	-,293	,042	,037	,362	-,060	-,089
		Sig. (2-tailed)		,289	,881	,896	,185	,832	,752
		N	15	15	15	15	15	15	15
	Percentage goals driven	Correlation Coefficient		1,000	,086	-,214	-,175	,484	,368
		Sig. (2-tailed)			,762	,444	,533	,068	,178
		N		15	15	15	15	15	15
	Percentage predictive control	Correlation Coefficient			1,000	,181	-,578	,511	,176
		Sig. (2-tailed)				,518	,024	,052	,529
		N			15	15	15	15	15
	Percentage expected returns	Correlation Coefficient				1,000	,070	,289	,064
		Sig. (2-tailed)					,804	,296	,821
		N				15	15	15	15
	Percentage avoiding contingencies	Correlation Coefficient					1,000	-,266	-,221
		Sig. (2-tailed)						,339	,428
		N					15	15	15
	Percentage emphasis data	Correlation Coefficient						1,000	,029
		Sig. (2-tailed)							,919
		N						15	15
	LOT-R optimism score	Correlation Coefficient							1,000
		Sig. (2-tailed)							
		N							15

² The correlations for the relative causal categories are shown. The results for the relative effectual results are the same, since the percentages always add up to 100% per category, but the sign (minus or plus) in the correlation is reversed.

Correlations

			Goal driven statements	Expected returns statements	Competitive analysis statements	Market knowledge statements	Predictive control statements	Emphasis on data statements	Means based statements	Affordable loss statements	Alliances statements	Exploration contingencies statements	Nonpredictive control statements	Distrust market research statements	LOT-R Optimism Score
Spearman's rho	Goal driven statements	Correlation Coefficient	1,000	-,036	,204	-,019	-,213	,500	,096	,157	,479	,360	,056	-,284	,120
		Sig. (2-tailed)		,897	,465	,946	,446	,058	,734	,577	,071	,187	,843	,305	,670
		N	15	15	15	15	15	15	15	15	15	15	15	15	15
	Expected returns statements	Correlation Coefficient		1,000	,004	-,134	-,151	-,077	,310	-,134	,246	,081	-,023	-,050	,014
		Sig. (2-tailed)			,990	,634	,590	,784	,261	,635	,377	,774	,936	,858	,962
		N		15	15	15	15	15	15	15	15	15	15	15	15
	Competitive analysis statements	Correlation Coefficient			1,000	-,039	,157	,634	,352	-,355	,039	,013	-,239	-,173	,065
		Sig. (2-tailed)				,890	,576	,011	,198	,194	,890	,963	,391	,539	,817
		N			15	15	15	15	15	15	15	15	15	15	15
	Market knowledge statements	Correlation Coefficient				1,000	-,069	-,140	,154	-,053	-,356	-,253	,342	,010	-,258
		Sig. (2-tailed)					,808	,619	,585	,851	,193	,363	,212	,972	,354
		N				15	15	15	15	15	15	15	15	15	15
	Predictive control statements	Correlation Coefficient					1,000	,131	-,188	,087	-,057	,442	-,337	-,349	,001
		Sig. (2-tailed)						,642	,502	,757	,840	,099	,220	,202	,997
		N					15	15	15	15	15	15	15	15	15
	Emphasis on data statements	Correlation Coefficient						1,000	,099	,036	,047	,311	-,432	-,138	,229
		Sig. (2-tailed)							,724	,900	,867	,259	,108	,625	,412
		N						15	15	15	15	15	15	15	15
	Means based statements	Correlation Coefficient							1,000	,361	,066	,242	,083	,342	-,370
		Sig. (2-tailed)								,186	,816	,385	,768	,213	,175
		N							15	15	15	15	15	15	15
	Affordable loss statements	Correlation Coefficient								1,000	-,125	,455	,073	,325	-,203
		Sig. (2-tailed)									,656	,088	,796	,237	,469
		N								15	15	15	15	15	15
	Alliances statements	Correlation Coefficient									1,000	,316	,049	-,163	,295
		Sig. (2-tailed)										,251	,863	,562	,285
		N									15	15	15	15	15
	Exploration contingencies statements	Correlation Coefficient										1,000	-,071	-,225	-,282
		Sig. (2-tailed)											,803	,419	,309
		N										15	15	15	15
	Non-predictive control statements	Correlation Coefficient											1,000	,369	-,122
		Sig. (2-tailed)												,176	,665
		N											15	15	15
	Distrust market research statements	Correlation Coefficient												1,000	-,031
		Sig. (2-tailed)													,913
		N												15	15
	LOT-R Optimism Score	Correlation Coefficient													1,000
		Sig. (2-tailed)													
		N													15

Table 2 The correlations and significance of correlations between the percentage of the coding categories and the optimism score

4.2 Descriptive statistics and differences

Table 3 presents the descriptive findings per category. First the data for the absolute number of statements is shown per category of effectuation or causation, then the total of effectual and causal statements and the end of the table shows the relative numbers per category and the findings of the LOT-R for optimism (which can give a maximum score of 24).

Table 4 shows the comparison of the opposing categories of effectuation and causation and whether the differences are statistically significant. The Mann-Whitney U (independent sample) test was used, as explained in chapter 3.3. The results of this test could possibly show certain influences of culture and remarkable results will be discussed in chapter 5 along with the outcomes of the results for the hypotheses. When a significance lower than 0.05 (5%) is displayed, this means the medians of the two opposing elements within the category are significantly different from each other from this test.

Table 5 shows the most important data from the 15 participants. The number of statements made in each category and their score on the LOT-R test for optimism can be seen as well as their study, age, gender and experience within their company. These last demographics are possible influences on the use of effectuation and causation. This is further discussed in chapter 5.2. A remark in regard to the data is that some entrepreneurs only filled in their age and not their day of birth because of privacy reasons.

Table 3 Findings per category. Absolute and relative (percentages)

Descriptive Statistics Business Case Data

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Goal driven	15	,00	8,00	57,00	3,8000	2,00713
Expected return	15	1,00	10,00	75,00	5,0000	2,95200
Competitive analysis	15	,00	6,00	40,00	2,6667	1,54303
Existing market knowledge	15	,00	4,00	21,00	1,4000	1,24212
Predictive control	15	,00	5,00	31,00	2,0667	1,33452
Emphasis on data	15	,00	5,00	36,00	2,4000	1,29835
Means based	15	3,00	15,00	120,00	8,0000	3,58569
Affordable loss	15	,00	5,00	38,00	2,5333	1,72654
Focus on alliances	15	,00	6,00	41,00	2,7333	2,21897
Exploration of contingency	15	,00	4,00	27,00	1,8000	1,47358
Non predictive control	15	,00	9,00	44,00	2,9333	2,65832
Distrust of market research	15	,00	7,00	22,00	1,4667	1,84649
Total causal statements	15	9,00	27,00	261,00	17,4000	4,71775
Total effectual statements	15	9,00	38,00	293,00	19,5333	8,17546
Percentage competition analysis	15	,00	1,00		,5069	,31554
Percentage goals driven	15	,00	,67		,3280	,15551
Percentage predictive	15	,00	1,00		,4500	,32938
Percentage expected returns	15	,20	1,00		,6474	,23170
Percentage_av oiding_continge ncies	15	,00	1,00		,4444	,36415
Percentage emphasis on data	15	,00	1,00		,7000	,28563
LOT-R optimism score	15	14,00	23,00	280,00	18,6667	3,03942

Table 4 Independent Mann-Whitney U tests between opposing categories

Test Statistics^a

	Means vs Goals	Returns vs Affordable loss	Competition vsAlliances	Avoiding vs Exploring contingency	Predictive vs Non- predictive	Emphasis vs Distrust data	Total Causal vs Total Effectual
Mann-Whitney U	32,000	57,500	111,500	96,500	102,000	60,000	112,000
Wilcoxon W	152,000	177,500	231,500	216,500	222,000	180,000	232,000
Z	-3,361	-2,298	-,042	-,684	-,445	-2,242	-,021
Asymp. Sig. (2-tailed)	,001	,022	,966	,494	,656	,025	,983
Exact Sig. [2* (1-tailed Sig.)]	,000 ^b	,021 ^b	,967 ^b	,512 ^b	,683 ^b	,029 ^b	1,000 ^b

a. Grouping Variable: Causal opposed to effectual category

b. Not corrected for ties.

Table 5 Data and findings participants

no.	Age at case d	Gender	Study	Age of company (years)	LOT-R optimism	Causation	Total goal	Total returns	Total competitr	Total market kn	Total prediction	Total emphasis	Total other cau	Total Causal	
1	21	M	Science, Technology and Society	0.3	19	1	5	4	3	0	3	5	1	21	
2	23	M	EECS	1	15	2	8	6	3	4	3	3	0	27	
3	23	M	Industrial engineering & OR	1.5	21	3	6	4	4	2	1	3	0	20	
4	24	M	EECS	0.8	23	4	0	8	3	1	3	2	0	17	
5	26	M	Economics	1	14	5	3	10	3	1	2	2	0	21	
6	27	M	Finance	3	23	6	3	8	2	1	2	2	0	18	
7	21	M	Government	1	18	7	4	9	3	0	1	2	0	19	
8	30	M	Computer Schience, Business	5	21	8	6	4	1	1	2	1	0	15	
9	21	F	Economics	0.3	20	9	4	2	1	2	1	2	0	12	
10	22	M	Economics	3	19	10	5	7	4	1	0	3	0	20	
11	23	M	Philosophy	1	22	11	4	1	4	0	5	5	0	19	
12	20	M	Mechanical Engineering	0.1	18	12	2	6	0	2	2	2	0	14	
13	30	M	Civil Engineering	1	14	13	2	3	1	1	3	0	0	10	
14	26	M	Art History	3	16	14	2	2	6	4	3	2	0	19	
15	22	F	Media Studies	4	17	15	3	1	2	1	0	2	0	9	
							Effectuation	Total means	Total affordable	Total alliances	Total contingen	Tot non predict	Total distrust d:	Total other effe	Total effectual
							1	6	5	3	4	1	1	0	20
							2	14	5	2	4	1	0	0	26
							3	15	3	6	2	9	3	0	38
							4	9	3	0	1	2	2	0	17
							5	9	0	4	3	2	1	0	19
							6	6	1	6	0	0	1	0	14
							7	12	3	5	3	2	0	1	26
							8	3	2	5	1	6	0	0	17
							9	5	2	2	2	5	1	0	17
							10	8	1	1	0	3	2	0	15
							11	4	1	4	3	0	0	0	12
							12	4	3	0	1	3	1	0	12
							13	9	5	3	3	7	7	0	34
							14	7	0	0	0	2	0	0	9
							15	9	4	0	0	1	3	0	17

4.3 Findings hypotheses

Below are the results for the hypotheses and is discussed which differences between categories were significant. The conclusions and implications of these results will be discussed in chapter 5.

H1a: Entrepreneurs with high optimism are driven by goals.

H1b: Entrepreneurs with low optimism are driven by means.

Spearman's rank correlation does not show a significant relation between optimism and goal-driven behavior in table 1, but it does show a significant (99.3%) correlation as we hypothesized if we leave out one extreme case (0 statements of goal drive and 9 of means drive). Therefore the hypotheses are not rejected, nor fully confirmed. Despite this significant correlation, American student entrepreneurs in this sample are significantly more means-based in their decisions. Only one of the participants mentioned goals more than means.

H2a: Entrepreneurs with high optimism focus on non-predictive control.

H2b: Entrepreneurs with low optimism focus on predictive control.

There was no significant relationship between optimism and non-predictive control because of which the hypotheses are rejected. On average, the participants used non-predictive control almost twice as much as predictive control. Because of the low number of statements (75), this difference is not significant.

H3a: Entrepreneurs with high optimism focus on expected returns.

H3b: Entrepreneurs with low optimism focus on affordable loss.

There is no significant relationship between the relative results of expected returns and optimism, but there is one if we look at the absolute results. If we leave out two cases of people who did not make any statements on affordable loss, the number of statements that indicate a focus on affordable loss is statistically significant negatively correlated with optimism, as could be expected from our hypothesis. Two left out cases on 15 cases in total is a large number, but the significance of 99.1% shows there might be truth in our reasoning. Therefore we reject only hypothesis 3a. Furthermore, with almost twice as many statements in which expected returns are expressed (75) as in which affordable loss is noted (38), there is a statistically significant difference between these

two categories, with only 2.1% chance that the participants were not more focused on expected returns and the difference is randomly created.

H4a: Entrepreneurs with high optimism focus on potential partnerships.

H4b: Entrepreneurs with low optimism focus on potential competition.

There is no correlation between a focus on competitive analysis and optimism. There is also a very small difference between the number of times partnerships (41) and competition (40) were mentioned. The hypotheses are rejected.

H5a: Entrepreneurs with high optimism focus on leveraging contingencies.

H5b: Entrepreneurs with low optimism focus on avoiding contingencies.

There is no significant correlation between optimism and leveraging contingencies and therefore the hypotheses are rejected. The participants' protocols resulted in 21 statements (43.75%) referring to existing market knowledge and 27 statements (56.25%) referring to exploration of a contingency, which is no significant difference.

Effectuation opposed to causation

In total the 15 participants expressed 261 statements referring to a causal mindset and 293 to an effectual one. On average the participants indicated a causal category 17.4 times and an effectual one 19.5 times. This difference is so small that the Mann-Whitney U test, which uses ranks, gives a 100% chance that the medians of these ranks are the same. There is also no correlation with optimism.

Effectuation questionnaire

In table 6 the descriptive statistics are presented for the results from the questionnaire on the use of effectuation or causation in the starting of the participating entrepreneur's own company. A paired samples T-Test (which can be used because both data have a normal distribution and we want to test differences in the test per person) in table 7 was used to compare the percentages effectuation and causation from the case and questionnaire and proves that these results do not statistically significant differ from the results of the case. This finding provides extra value to the case findings, as was explained in section 3.4.

Table 6 *Descriptives own company questionnaire**Descriptive Statistics Effectuation Questionnaire*

	N	Percentage	Minimum	Maximum	Mean	Std. Deviation
Totaal_causal_questionnaire	15	53,58	21,00	40,00	31,4667	5,40987
Totaal_effectual_questionnaire	15	46,42	17,00	35,00	27,2667	4,78788

Table 7 *Paired Samples T-test between questionnaire and case data per participant**Paired Samples Test*

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	percentage_causation_questionnaire - percentage_causation_case	,05309	,12183	,03146	-,01438	,12056	1,688	14	,114

5. Discussion and conclusions

In this chapter, we will analyze the results as presented in chapter 4 and discuss them. In this way, we can further explicate the results for the hypotheses and try to answer the main research question: “How does culture influence the use of effectuation and causation by American student entrepreneurs when making business decisions?” We will first discuss the results for the different hypotheses as given in chapter 2.3. After that we will evaluate the figures overall and discuss any other remarkable results from the data. After the discussion, overall conclusions will be drawn and limitations will be discussed. The thesis will conclude with suggestions for further research.

5.1 Conclusion and discussion of results hypotheses

The LOT-R questionnaire resulted in an average of 18.7 out of 24, which can be converted to a POMP (Percentage Of Maximum Possible) score of 77.8%. This score already indicates that the participant were optimistic. We can compare this POMP score to the results in the earlier discussed research of Fischer & Chalmers (2008). Their study of 22 countries shows an overall average of 63.14. Our results are significantly higher, which confirms America’s (entrepreneurial) optimism.

Important to note is that no single participant had a low score on the LOT-R test (the lowest was 14 out of 24). This is in line with our expectations, but it also makes it harder to formulate conclusions for some of the hypotheses. Because there were no participants who could be called pessimists, a comparison between optimists and pessimists cannot be made, but only between optimists and lesser optimists. This is unfortunate in regard to the value of the judgments of the hypotheses which regard the link between concepts of effectuation or causation and optimism. This also includes that we cannot test or discover any curvilinear relationships, which were suggested by Hmieleski & Baron (2009). They found that venture performance was the highest for moderate pessimists and optimists, and lower for extreme optimists and pessimists. It would have been interesting to test this kind of relationships for our concepts as well, but with the data at hand we are not able to do this. There is however still enough data and difference between the entrepreneurs in their LOT-R score, to evaluate possible relationships between a scale from moderate optimism to high optimism and the different concepts and in this way we will evaluate the hypotheses.

H1a: Entrepreneurs with high optimism are driven by goals.

H1b: Entrepreneurs with low optimism are driven by means.

For the causal relationship between goal-driven behavior and optimism, there are some remarkable results. After we omit one participant who had an extreme outcome, there is a statistical significant relationship between optimism and a goal-driven instead of mean-driven mindset. This might indicate that our reasoning in which we followed Carver et al. (2010) is right to a certain level and that indeed optimistic entrepreneurs use relatively more goal-driven when they are more optimistic or, to follow the reasoning from section 2.3, that lesser optimists are quicker in disregarding goals and are therefore less concerned with them.

However, the absolute results clearly indicate that the research sample was more means-driven than goals-driven. This finding is different than expected, since we expected the entrepreneurs to be goal-driven because of their optimism, but is in line with what might be reasoned from Sarasvathy's work (2001a), that entrepreneurs are overall more concerned with means than goals. In this perspective, a reason for our results might be that our research sample is very particular: they are all entrepreneurs. Following Carver et al. (2010) we reasoned that optimists might be more attracted to goal attainment and this might indeed be true. This effect might, however, be partly compensated by the influence of the fact that all participants were entrepreneurs. Combined with our logic explained in the paragraph above, this would mean that optimism indeed leads to a tendency to be more goal-driven, but that the fact that they are all entrepreneurs still makes that overall means-driven behavior is the most used. An interesting remark is that the most used 'mean' was experience the entrepreneur had with the type of problem. This concept accounted for 34 (28.3%) of the coded effectual statements of means-driven.

H2a: Entrepreneurs with high optimism focus on non-predictive control.

H2b: Entrepreneurs with low optimism focus on predictive control.

The hypotheses were rejected: there were no correlations between optimism and the use of predictive or non-predictive control. Furthermore, although on average non-predictive control was used twice as much as predictive control, the difference between the two categories is too small to be significant. If the same results showed up in a

larger research group (as to be more significant), this would point at a use of more non-predictive control by American student entrepreneurs. This might then however not be explained by their optimism, which we reasoned in the hypotheses, but maybe by the fact that all participants were student entrepreneur. We already mentioned this in the discussion of the first hypotheses: with a low number of results it is hard to show direct relationships in this research group; all the participants were starting entrepreneurs and this fact might have a bigger impact than optimism in certain categories.

One of the entrepreneurs mentioned for instance the ‘lean startup approach’ which is advocated by Eric Reis in his book ‘The Lean Startup’, a book that sold more than 90,000 copies within the USA alone (Greenwald, 2012). This book is all about non-predictive control and being a flexible entrepreneur. The influence of reading a book like this might be much more significant than that of optimism or than national culture at all. This is not to say that the influence of national culture is not measurable in this research group, but with only fifteen participants combining to 44 statements in which non-predictive control was expressed, of which three entrepreneurs combined to halve (22) of them, the influence of other factors (like reading a book or having a certain course) is potentially too big to draw a conclusion to these hypotheses.

H3a: Entrepreneurs with high optimism focus on expected returns.

H3b: Entrepreneurs with low optimism focus on affordable loss.

There is no significant correlation between optimism and the percentage of focus on expected returns compared to affordable loss, but there is a significant negative relationship (99.5%) between the number of expressions made indicating affordable loss and the score on the optimism test if we leave out two extreme cases of persons with a low score on optimism and zero statements of affordable loss. This result might indicate that there is an element of truth in our rationale for the hypotheses.

Important is that our findings are not in line with the findings from Sarasvathy (2008). She hypothesized and found that entrepreneurs will be more focused on what can be lost than what can be gained, while our results show that the number of times expected results are mentioned is significantly higher than the number of affordable loss statements. This difference between our results and literature might indeed exist because of our reasoning expressed in chapter 2.3, that optimism is of influence. With our

results, it might be that more optimistic entrepreneurs are indeed less concerned with what can be lost, because they see their future as bright, as we hypothesized. This does not necessarily mean that they will be more concerned with what can be won - the expected returns - as we also expected. Maybe, because of their optimism, they disregard any predictions of what can be won or lost; they simply jump in and expect it to fall in their favor. This would then be the reason why our results are different from Sarasvathy's, who reasoned that entrepreneurs focus on affordable loss instead of expected returns because they want to be able to experiment with as many strategies as possible within the given limit of means (Sarasvathy, 2001a).. The relationship between optimism and affordable loss might be an interesting relationship to test with a larger research group, since our findings were not significant when we included all participants but might show an addition to Sarasvathy's framework in this aspect.

H4a: Entrepreneurs with high optimism focus on potential partnerships.

H4b: Entrepreneurs with low optimism focus on potential competition.

There was no significant relationship between the categories and optimism and the hypotheses were rejected. Remarkable to note is the high variations in expressing these two categories: participants fluctuated from expressing statements in competition zero to six times, as did they with the partnerships. There was even a participant that did not mention any statement within one of the two categories. These results indicate that the research group is not evenly dispersed for these two categories and might suggest that other factors are of bigger influence on this concept than the high individualism and optimism of the American culture.

Apparently both concepts, analyzing competition and partnerships, do not contradict each other: in the business case a participant can both mention the competition a lot as well as possible partnerships or alliances, which indeed happened. This was also found by Chandler et al. (2011) who proved that a focus on partnerships can be both part of an effectual as well as a causal strategy, as was discussed in chapter 3.4.3. Apparently, somebody can both focus on possible competition as well as search for partners to attack this competition. Furthermore, a comparison of these results to a country in which the individualism index (where the hypothesis was based on in the first place) is lower might give a definitive answer to whether the proposed relationship between focus on competition and individualism does or does not exist, but from these results

individualism seems not a good predictor of the tendency to either competition analysis or focus on strategic partnerships.

H5a: Entrepreneurs with high optimism focus on leveraging contingencies.

H5b: Entrepreneurs with low optimism focus on avoiding contingencies.

The correlation between the score for the optimism test and the expression of leveraging of contingencies is too weak to be statistically significant, mainly because there were only 48 total coded expressions between the two categories. To properly test this relationship, more data is needed. Apparently a statement of either existing market knowledge or exploration of contingency is not expressed often by the student entrepreneurs: on average the two categories combined to 3.2 statements per participant.

The low amount of results in this category might have to do with the nature and structure of the business case: the business case is not 'interactive' and might not give an incentive to come up with as much creative solutions as a real life situation might, because the progress in the case is not dependent on the entrepreneurs actions or the outcome of a decision is not known by the entrepreneur (since the progress is already decided within the case). Multiple student entrepreneurs expressed in the evaluation of the case that, although they would not have done anything differently when they would had done the assignment again, they might have been more creative in their solutions, but did not really feel the incentive. Another business case in which there is more interaction between the case and the participant and in which the participant feels more encouraged to seek for creative solutions, might gain different and more results in this perspective.

Remarks in regard to the data

Besides this discussion of the hypotheses, there are a few other remarkable findings:

Causation versus effectuation

With a difference of 32 expressions (more for effectual), there was no significant difference between the number of statements made in the effectuation category and the causation category. It is clear that effectuation and causation are indeed, as Sarasvathy (2001a) reasoned, not two ways of which an entrepreneur can choose only one, but can be combined: not one entrepreneur in the research sample showed to act solely in one of

the two manners; most participants used effectuation 40% to 60% of the time and the extreme cases were 68% causation and 77% effectuation.

Focus

Many of the entrepreneurs in the research group seem to have their own ‘focus’, which could result in extreme outcomes in one or more categories. For instance, one participant often focused on expected returns, with ten statements in this category and not one for affordable loss; another mentioned non-predictive control (experimenting in particular) more than anyone else (nine times) and did not mention any predictive control at all. Yet others were focused on using their experience as a mean (the mentioning of experience alone resulted in nine means-driven codes in one business case) or on partnerships. These extreme cases might be caused by different factors than culture alone and it is interesting to analyze the results when they are left out. This gave two interesting results in our findings, which are already discussed (the relationship between goal-driven and optimism and the negative relationship between affordable loss and optimism).

Relationship avoiding contingencies and non-predictive control

As can be seen in table 1, chapter 4.1, the percentage of avoiding contingencies (as opposed to leveraging them) is statistically significantly (97.4%) negatively correlated with the percentage of predictive control (so it is positively correlated with non-predictive control). Although with an increasing number of variables and a low number of observations, the chance that a significant correlation is found by chance grows (Topliss & Costello, 1972), this relationship might be interesting. Important is that the correlation is negative, which means that if participant expressed more avoiding of contingencies (compared to leveraging contingencies) they expressed less focus on predictive control (compared to non-predictive control). Because the categories are both aspects of causation, it might at first sight have made more sense if the correlation was positive. There might be an explanation with the following reasoning: avoiding contingencies was coded when somebody expressed pre-existing market knowledge (section 3.1). If somebody expresses that he knows the market, maybe he feels less need to predict the future, since he knows the current state. So if somebody already knows what a market or situation looks like, he might feel less inclined to actually make predictions and might make more direct decisions to either jump in or stay away.

Relationship focus on competition and emphasis on data

As can be seen in table 2, 4.1, with Spearman's correlations, there is a statistically significant correlation between the percentage of statement made regarding competition and the number of times an emphasis on data is expressed, with a correlation of 63.4% and a significance of 98.9%. What might be a possible explanation for this result? When somebody uses predominantly causal behavior (where both these concepts are an element of) before stepping into a market, he might feel inclined to first properly research the market and situation he will be part of. To do this, he might analyze his competition, the first element in this relationship, and also emphasize on (market research) data that is given to him, the second element. In this way he will be able to assess the situation for both aspects. This link was also expressed by Sarasvathy (2008): "Imagine an entrepreneur who is considering quitting his well-paying job to start his own firm. Causal logic suggests he should do some market research and competitive analysis to estimate the potential risk and return to the venture and then decide whether he wants to take the plunge" (p.81-82). Somebody more effectuation driven, might not analyze his competition, nor focus on any research data, because he does not try to predict the situation, but simply jumps in and tries to control it from there.

5.2 Limitations

There are a few other remarks that have to be made in regard to the limitations our way of conducting research had:

The first questions of the case (problem 1) ask the participant to indicate his potential customers, potential competitors, what information he would like to have from them, how he will find out this information and what he thinks are the growth possibilities. These issues are typically things a causal entrepreneur would question himself and for that reason the questions might give a causal bias. The data would be less valuable if this indeed influences the way the entrepreneurs answers questions. Especially the question referring to possible market research might have the entrepreneur's mind set to this, while he may not have thought of this himself in a more open question. However, these questions seem of little such influence, since the questionnaire concerned with the entrepreneur's real life experiences indicated no significant difference from the results from the case.

The questions in the questionnaire regarding the participant's company referred to the startup period of the entrepreneur's business. This might, however, give a little distorted image of the interviewed entrepreneur. This is because when a company has multiple co-founders (as all but three in the research group had) it may be assumed that other co-founders had a big influence in the starting of the company as well. Take for instance the question: "We designed and planned production and marketing efforts", which points towards causal behavior. Sometimes it might be the case that the participant is very effectual driven, but his co-founders are more causal. If these co-founders were of big influence during the startup phase, he will give this question a high-grade answer. It might however have been a different answer if he would have started the company alone or with other co-founders. Nonetheless, the result from the questionnaire did not significantly differ from the results from the case, as we already discussed.

The most important question, where the EPICC Project is all about, is what the factors are that influence our results. This might indeed be the American culture and their optimism as we hypothesized. But it might as well be the fact that all entrepreneurs were interviewed while working in the San Francisco Bay Area, which is the heart of 'Silicon Valley' and is famous for its entrepreneurial atmosphere. Or it might be one of all the other factors that influence a starting business; the current economy, the success factors of other well-known businesses in the area or friends who give advice, to name a few. With all these contextual elements influencing the entrepreneurs in our sample, it is close to impossible to filter out all the specific cultural elements with these results alone.

There are many other things that might be of influence on the behavior of the entrepreneurs than culture or environment alone. Although we measured many of these variables, some of which are shown in table 6 in chapter 4, we were not able to test whether these are of influence, because the research group was not dividable in two comparable groups in certain aspects. As explained in chapter 3.4, there were no participants with a study program that has a potential influence on entrepreneurship (MBA's or other study programs that teach entrepreneurial or business skills). Furthermore there was too little difference between the years of experience of the entrepreneurs to be able to compare the difference in results. In age there was variety

between the participants (from 20 to 30), but there appears to be no relationship to effectuation and causation. Gender might be of influence as well, but with only two female participants, this cannot be statistically researched. Furthermore the differences within the United States of America might be a factor. America is a wide country and the differences between the east coast and the west coast are big. This factor couldn't be tested either, because most participants were born and raised around the west coast and only a few on the east coast or in the centre regions.

5.3 Conclusion and review of findings

Now that we have discussed the literature background of our research, the way our research was conducted and our findings, we can try to answer the main research question: *“How does culture influence the use of effectuation and causation by American student entrepreneurs when making business decisions”*

We have used Sarasvathy's theory on effectuation to separate five categories in which entrepreneurs can differ when making a business decision. Next, to analyze how culture could influence this, we have used Hofstede's framework and linked his dimension of individualism to optimism and optimism to the use of effectuation or causation. In this way it was hypothesized that America's individualism and with that its optimism would lead to the entrepreneurs being goal-driven (c³), focused on expected returns instead of affordable loss (c), using non-predictive control (e) more than predictions, being focused on competition (c) instead of partnerships and trying to leverage contingencies (e) instead of avoiding them.

To measure the use of effectuation and causation, we have conducted 'think aloud' business cases with 15 student entrepreneurs born in America. Furthermore, questionnaires were filled in to measure the use of effectuation or causation at the start of the participant's company and to collect personal data. Since we narrowed the American culture down to individualism and with that optimism, we tested optimism directly with the revised Life Optimism Test to be able to test the hypotheses.

³ c stands for a causal element; e stands for an effectual element

With this data, we were able to answer the research question and to draw final conclusions to the question what the influence of national culture is on the use of effectuation and causation by American student entrepreneurs. We measured the effect of optimism on both the relative and the absolute number of times the categories were mentioned. In analyzing the results from the research we found the answer to our research question: There was no influence found of the American culture on the use of effectuation or causation as a whole by American student entrepreneurs, but the entrepreneurial processes of the entrepreneurs are influenced by their country's culture, in that optimism influences aspects of effectuation and causation; As we hypothesized, we both found that American student entrepreneurs are goal-driven (c) because of their culture's element of optimism and that they are less focused on affordable loss (c) for the same reason. These (ranked) correlations were significant if we left out respectively one and two extreme cases; other relationships were not significant.

Of course, our results show just one of the factors that can be investigated. In this way, we found part of the cultural influences that might affect an entrepreneur; other factors might be found when the results are compared to other countries. We should be optimistic and assume we have not measured the only discoverable effect culture has on entrepreneurs; maybe we should think in a more causal way and see our findings as a contribution to the goal of mapping all cultural influences and supporting future entrepreneurs and entrepreneurial organizations in this way.

5.4 Contributions to literature, research and practice

In this thesis we linked (the literature on) culture, optimism and effectuation. In this way we made contributions to each of these fields:

As explained in chapter 1.3, one of our objectives was to research whether the introduction of a cultural factor to the effectual framework would be a valuable contribution to the literature of Sarasvathy (2001a). Our results show that culture might be a factor that influences certain aspects of effectuation and causation. Although the results are not fully definitive, it does show how certain findings can be explained better by the American culture (and more specifically its optimism) than by Sarasvathy's framework without a cultural element. The most distinct in this regard are the findings on the category of affordable loss and expected returns. While Sarasvathy (2008)

reasoned and found that entrepreneurs focus on expected returns our results show that the research sample of American student entrepreneurs focus more on expected returns, which we had also hypothesized because of their optimistic culture. This is a clear result and there are also other findings which show that culture could and maybe also should be taken in regard when analyzing how entrepreneurs act within the effectual framework: The findings show, in line with Sarasvathy (2008), that entrepreneurs are more focused on means than on goals. However, in addition we found that entrepreneurs who are more optimistic might be more goals-driven. In this way we confirmed part of Sarasvathy's theory but also contributed with a factor that might be taken into account when analyzing how entrepreneurs from different cultures act within the effectuation framework. This is exactly how this thesis and the project of which it is part is a contribution to the field on entrepreneurship and when the results from other countries with different cultures are analyzed we will be able to make definitive conclusions on whether the framework of effectuation is more valuable with a cultural element in it, but as yet our results show this to be the case.

We did not only make a contribution to the field of effectuation, but also to the field of culture and optimism. First, we showed how the aspect of individualism from Hofstede's cultural dimensions framework (2001) can be linked to optimism. As we described in chapter 2.3.2, there has been a lot of literature on the aspect of optimism in the American culture, but apart from the meta-analysis of Fischer & Chalmers (2008) there has been little theory on how optimism differs between countries and how this might be explained from a cultural framework. After analyzing Hofstede's (2001) dimensions we showed how optimism can be linked to the dimension of individualism and as a result how America's high score on individualism can be one of the explanations for its optimism.

Within the field of optimism a contribution was made as well. As explained in 2.3.3 literature exists that explains how optimism relates to the popularity of entrepreneurship in America (Storey, 2011) and how optimism influences the performance of entrepreneurs (Hmieleski & Baron, 2009). There has however been very little (descriptive) research on how the entrepreneurial processes themselves are influenced by optimism. We were able to formulate hypotheses by relating the definition of optimism of Scheier et al. (1994) to the descriptions of the different elements of

effectuation and causation by Sarasvathy (2001) and Read (2008). In this way we constructed a potential framework for the relation between effectuation and optimism that could be used for further research, as explained in section 5.5.

We also showed that it is important to not only consider effectuation and causation as a whole but analyze the elements within these concepts as well. In this way we found that some elements of effectuation and causation might be positively influenced by optimism while others might be negatively influenced, which our results also proved. This confirms Sarasvathy's (2001a) framework in that entrepreneurs can have their own 'mix' of effectual and causal elements.

A last important thing we showed is that optimism is something that is not just one of the characteristics of the average American, but is really an important specification of the American culture and influences multiple aspects of entrepreneurship. This can be related to the Iceberg model of culture (Dahl, 2004) (which was described in chapter 2.2) which explains that we should carefully pay attention to the visible elements of culture (optimistic expressions as tested with the LOT-R in this case) to be able to derive the system underneath it (how optimism influences other fields).

5.5 Suggestions for future research

Our research provides some interesting results, but some of the investigated hypotheses and other adjacent ideas are still open for more definitive research. The most important suggestion for further research would be to compare the results we gathered with other countries and cultures. Only in that way, the influence of culture can be properly tested. This is exactly what the idea of the EPICC Project is and it will be interesting to see the end-results in that perspective. Will countries with lower individualism indeed have different results in regard to the different elements of causation, as we hypothesized? In this manner the influence of other dimensions and cultural characterizations can be tested too.

We narrowed this cultural perspective down to the American optimism and formulated hypotheses by linking optimism and the different elements of effectuation. We did not have enough variation in our research group to give definitive conclusions on the influence of optimism on all the categories of effectuation and causation. A more

diverse (not only entrepreneurs for instance) and larger research group could give interesting results to our proposed hypotheses and in this way answer the question whether pessimists indeed make different use of the elements of causation and effectuation than optimists.

Our project is about the potential influence of culture on entrepreneurs. Culture is however of course not the only factor that is worth examining. There has been research on the influence of other factors, such as the influence of study or experience. Many other factors are still open to investigate. Are there for instance gender differences related to effectuation, or is family situation or number of founders of influence? These demographics are all measured for the participants in the EPICC Project, so it might be possible to derive conclusions on this kind of factors as well when all data is aggregated.

The last suggestion we would like to give is to keep evaluating the concept of effectuation itself as well. More than 10 years after Sarasvathy first defined the concept, there has been little change in the concept itself and it is mostly treated as a given in regard to the definition of effectuation and differences with causation. Studies like Chandler et al. (2011) performed (discussed in chapter 3.7.3), however, show that the concepts of causation and effectuation are not yet fully crystallized. It is important to keep 'updating' these aspects and progress further into analyzing how entrepreneurs act in the 'real world'. Next to this, it is important that these results will not stay within the world of academic research. Effectuation has the potential to form a new paradigm to study programs on entrepreneurship and starting businesses. It would be a great opportunity to re-evaluate entrepreneurial studies with the help of the theory on effectuation and help the entrepreneurs of the future. "Because they change things. They push the human race forward."

Bibliography

Apple Inc. (1997). Apple Inc. Think Different commercial.

Barbe, D. F., Magids, S. A., & Thornton, K. S. (2003). Holistic approach for technology entrepreneurship education in training. *Frontiers in Education, 2003. FIE 2003 33rd Annual*, T2D-1 - T2D-6.

Busenitz, L. B., & Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations. *Journal of Business Venturing* , 9-30.

Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Boston: Houghton Mifflin Company.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review* , 879-889.

Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of Business Venturing* , 375-390.

Cooper, A. C., Woo, C. Y., & Dunkelberg, W. C. (1988). Entrepreneurs' perceived chances for succes. *Journal of Business Venturing* , 97-108.

Dahl, S. (2004). *Intercultural Research: The Current State of Knowledge*. London: Middlesex University.

Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2009). Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of Business Venturing* , 287-309.

Ericsson, K. A., & Simon, H. A. (1992, January 5). Protocol Analysis. University of Colorado.

Finkle, T. A., & Deeds, D. (2001). Trends in the market for entrepreneurship faculty. *Journal of Business Venturing* , 613-630.

Fischer, R., & Chalmers, A. (2008). Is optimism universal? A meta-analytical investigation of optimism levels across 22 nations. *Personality and Individual Differences* , 378-382.

Fischer, R., Ferreira, M. C., Assmar, E., Redford, P., Harb, C., Glazer, S., et al. (2009). Individualism-collectivism as descriptive Norms : Development of a subjective norm approach to culture measurement. *Journal of Cross-Cultural Psychology* , 187-213.

Goel, S., & Karri, R. (2006). Entrepreneurs, effectual logic, and over-trust. *Entrepreneurship Theory and Practice* , 477-490.

Goodman, E., Knight, J., & DuRant, R. (1997). Use of Life Optimism Test among adolescents in a clinical setting: A report of reliability Testing. *Journal of Adolescent Health* , 218-220.

Greenwald, T. (2012, May 18). *Upstart Eric Ries sas the stage and the crowd Is going wild.* Retrieved July 12, 2012, from Wired: http://www.wired.com/business/2012/05/ff_gururies/all/1

Harms, R. (not published yet). Antecedents and consequences of effectuation and causation in the international new venture creation process.

Hayton, J. C., George, G., & Zahra, S. A. (2002). National culture and entrepreneurship: A review of behavioral research. *Entrepreneurship Theory and Practice* , 33-52.

Held, B. S. (2002). The tyranny of the positive attitude in America: Observation and speculation. *Journal of Clinical Psychology* , 965–992.

Herzberg, P. Y., Glaesmer, H., & Hoyer, J. (2006). Separating optimism and pessimism: A robust psychometric analysis of the revised Life Orientation Test (LOT–R). *Psychological Assessment* , 433-438.

Hmieleski, K. M., & Baron, R. A. (2009). Entrepreneurs' optimism and new venture performance: a social cognitive perspective. *Academy of Management Journal* , 473-488.

Hofstede, G. (2001). *Culture's Consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks: Sage Publications.

Hofstede, G. (2005). *Cultures and organizations: software of the mind, 2nd edition*. New York: McGraw-Hill.

Hofstede, G. (1983). The cultural relativity of organizational practices and theories. *Journal of International Business Studies* , 75-89.

Hofstede, G. (2006). What Did GLOBE Really Measure? Researchers' Minds versus Respondents' Minds. *Journal of International Business Studies* , 882-896.

Hofstede, G. (Year Unknown). *United States - Geert Hofstede*. Retrieved May 14, 2012, from Geert Hofstede: <http://geert-hofstede.com/united-states.html>

Hofstede, G., Hofstede, G. J., Minkov, M., & Vinken, H. (2008). *Values Survey Module 2008 manual*. Geert Hofstede BV.

Huizingh, E. (2010). *Inleiding SPSS 18.0, tiende editie*. Den Haag: Sdu Uitgevers bv.

Javidan, M., House, R. J., Dorfman, P. W., Hanges, P. J., & Mary. (2006). Conceptualizing and measuring cultures and their consequences: A comparative review of GLOBE's and Hofstede's approaches. *Journal of International Business Studies* , 897-914.

Jobs, S. (2005). *"You've Got to Find What You Love"*. Stanford: Stanford University.
Lenartowicz, T., & Roth, K. (1999). A framework for culture assessment. *Journal of International Business Studies* , 781-798.

Manove, M. (2000). *Entrepreneurs, optimism and the competitive Edge*. Boston: Boston University.

Moroz, P. W., & Hindle, K. (2011). Entrepreneurship as a process: Toward harmonizing multiple perspectives. *Entrepreneurship Theory and Practice* , 1-34.

Mueller, S., & Thomas, A. (2000). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing* , 51-75.

Onwuegbuzie, A. J. (2000). Expanding the framework of internal and external validity in quantitative research. *Annual meeting of the association for the advancement of educational research* (pp. 1-62). Ponte Vedra: EDRS.

Perry, J. T., Chandler, G. N., & Markova, G. (2011). Entrepreneurial effectuation: A review and suggestions for future research. *Entrepreneurship Theory and Practice* , 1-22.

Read, S., Dew, N., & Sarasvathy, S. D. (2008). Marketing under uncertainty: The logical of an effectual approach. 1-50.

Reeves, R. (2009, May 28). *The United States of Optimism*. Retrieved July 10, 2012, from Bloomberg Business Week Magazine: http://www.businessweek.com/magazine/content/09_23/b4134061794792.htm

Rose, J. P., Endo, Y., Windschitl, P. D., & Suls, J. (2008). Cultural differences in unrealistic optimism and pessimism. *Personality and Social Psychology Bulletin* , 1236-1248.

Sarasvathy, S. D. (2001a). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review* , 243-263.

Sarasvathy, S. D. (2008). *Effectuation: Elements of entrepreneurial expertise*. Cheltenham: Edward Elgar Publishing Limited.

Sarasvathy, S. D. (2003). What I set out to study and why. In S. D. Sarasvathy, *Effectuation: Elements of entrepreneurial expertise* (pp. 1-23). Virginia.

Sarasvathy, S. D. (2001b). What makes entrepreneurs entrepreneurial? University of Virginia.

Sarasvathy, S. D., & Dew, N. (2005). New market creation through transformation. *Journal of Evolutionary Economics* , 533-565.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology* , 1063-1078.

Smith, P. B. (2004). Nations, cultures, and individuals : New perspectives and old dilemmas. *Journal of Cross-Cultural Psychology* , 6-12.

Soares, A. M., Farhangmehr, M., & Shoham, A. (2007). Hofstede's dimensions of culture in international marketing studies. *Journal of Business Research* , 277-284.

Someren, M. W., Barnard, Y. F., & Sandberg, J. A. (1994). *The Think Aloud method*. London: Academic Press.

Storey, D. J. (2011). Optimism and chance: The elephants in the entrepreneurship room. *International Small Business Journal* , 303-321.

Topliss, J. G., & Costello, R. J. (1972). Chance correlations in structure-activity studies using multiple regression analysis. *Journal of Medical Chemistry* , 1066-1068.

Thornton, P. H. (1999). The sociology of entrepreneurship. *Annual Review of Sociology*, 19-46.

Trompenaars, F., & Hampden-Turner, C. (1997). *Riding the waves of culture*. London: Nicholas Brealey Publishing.

Tung, R. L., & Verbeke, A. (2010). Beyond Hofstede and GLOBE: Improving the quality of cross-cultural research. *Journal of International Business Studies* , 1259-1274.

Venaik, S., & Brewer, P. (2010). Avoiding uncertainty in Hofstede and GLOBE. *Journal of International Business Studies* , 1294-1315.

Venaik, S., & Brewer, P. (2008). Contradictions in national culture: Hofstede vs GLOBE . *International Human Resource Management, Cross-cultural Management, and Qualitative Research Methods* , 1-27.

Zogby, J. (2009, January 29). *The American dream is still strong*. Retrieved July 25, 2012, from Forbes.com: http://www.forbes.com/2009/01/28/american-dream-polling-opinions-columnists_0129_john_zogby.html

Appendix 1: Think-aloud business case

The following was the exact case as used to test the tendency for the different categories of effectuation and causation, as described in chapter 3.1

Introduction

In the following experiment, you will solve ten decision problems. These problems arise in the context of building a new company for an imaginary product. A detailed description of the product follows this introduction.

Before you start on the product description and the problems, I do need one act of creative imagination on your part. I request you to put yourself in the role of the lead entrepreneur in building this company -- i.e., you have very little money of your own to start this company, but you have about five years relevant working experience in the area.

Description

Since some time, you have been thinking of starting a coffee-corner at your university. Your inspiration for this came from the fact that when you, as a student, want to get a fresh cup of coffee, there was no possibility. You did not like the coffee from the machines which are available in the university buildings. Next to that, you had to pay an amount of money, which was in no relation to the quality of the coffee. You have been working in a coffee corner in your hometown for 5 years so you know what goes around

You saw the success of other coffee corners, but since these were from expensive franchisers, you thought that it should be possible to still start your own. In several reports in newspapers and magazines you read that there is an increasing demand for drinking coffee in your home country.

You have taken all possible precautions regarding intellectual property. The name of your company is *Coffee, Inc.*

Problem 1: Identifying the market

Before we look at some market research data, please answer the following questions -- one at a time:

1. Who could be your potential customers for your coffee corner?
2. Who could be your potential competitors?
3. What information would you seek about potential customers and competitors -- list questions you would want answered.
4. How will you find out this information -- what kind of market research would you do?
5. What do you think are the growth possibilities for this company?

Problem 2: Defining the market

In this problem you have to make some marketing decisions.

Based on secondary market research (published sources, etc.), you estimate that there are three major segments who are interested in drinking coffee at your coffee corner:

<u>Segment</u>	<u>Estimated total size</u>
Students	40.000
Staff members	20.000
Visitors (annually)	10.000

- The estimated value of regular coffee sales in your home country is €448 Million
- The estimated value of specialized coffee sales €100 Million.

Both are expected to grow at a minimum rate of 5% p.a. for the next 5 years.

The following are the results of the primary (direct) market research that you have completed.

Survey #1 – Students, staff members and visitors were asked via questionnaires to express their interest in a coffee corner. Also, they were asked to indicate what they were willing to spend on coffee.

In total, 1000 people were asked and 500 filled out the questionnaire.

<u>Willing to pay (€)</u>	<u>Students (%)</u>	<u>Staff members (%)</u>	<u>visitors (%)</u>
0,50 – 0,75	52	26	45
0,75 – 1,00	30	38	32
1,00 – 1,25	16	22	15
1.25 – 1,75	2	9	8
1,75 – 2,50	0	5	0
Total	100	100	100

Survey #2 -- The prices of coffee, offered during lunch breaks in between lectures

<u>Willing to pay (€)</u>	<u>Students (%)</u>	<u>Staff members (%)</u>	<u>visitors (%)</u>
0,50 – 0,75	65	21	51
0,75 – 1,00	25	49	42
1,00 – 1,25	10	19	7
1.25 – 1,75	0	8	0
1,75 – 2,50	0	3	0
Total	100	100	100

Survey #3 -- Focus Group of educators (high school and community college teachers and administrators)

Staff members of the university who participated in the focus group found the plan of the coffee corner very interesting – but indicated that the range of coffee could potentially be expended before they would be willing to spend €1,50 or more. With the current offer, they would be willing to pay €1,00 - € 1,25 and would demand a bonus system in which they could save up for discounts after a certain amount of coffee drunk.

Both at the lunch and the focus group, participants are very positive and enthusiastic about the coffee corner. They provide you with good feedback on specific features and also extend suggestions for improvement. But the staff members are particularly keen on going beyond the regular coffee aspect; they make it clear that much more diversity would be required in trying to market the product to them. They e.g. indicate that there are companies which might be capable of printing advertisement on cups for discounts on the coffee.

Based on all your market research, you arrive at the following cost estimates for marketing your product.

Internet	€200 upfront + €50 per month thereafter
Newspapers	Relatively cheap -- but ads could cost €500 upfront
Cinema	€2000 to 4000 per month, with €1000 upfront
Commercials on Local TV	€5000 to 10.000 upfront

Direct advertisement elsewhere (think of sport-canteens, handing out lighters with advertisement, etc)	Involves recruiting and training ‘sales representatives’
--	--

Competition

None of the following four possible competitors sell cheap quality cups of coffee in the center of your hometown - you are unique in this respect.

Company	General price level per cup of coffee	Revenue	Where to be found
Starbucks	€ 5,00	€6.5 billion	Large cities / global
Peet's	€ 4,00	€225 million	Large cities / mostly USA
Coffee Bean	€ 4,50	€130 million	Large cities / global
Douwe Egberts store	€ 2,50	€25 million	Large cities/ Netherlands

The coffee corner companies are making a **net return of 25% on sales**.

At this point, please take your time and make the following decisions: (Please continue thinking aloud as you arrive at your decisions)

Which market segment/segments will you sell your product to?

How will you price your product?

How will you sell to your selected market segment/segments?

Problem 3: Meeting Payroll

You have started the company on a shoestring, using face to face promotion as your primary source of marketing. You are six months into marketing your product. You have priced the products at the low end of the surveys at 0.50 – 0.75 euro. You have about 3000 customers per month. Based on numerous suggestions provided by your customers, you believe you can start selling special coffees in the range of 1.25 – 1.50 euro. This would especially be the case when you would redesign the interior of the coffee corner to make it into a more upscale coffee corner.

You have invested the last of your savings and maxed out your credit cards in order to make sure you have the coffee asked for in stock-- You need this to participate in a competition on where 'Architecture meets Catering', where you will get a lot of exposure.

You have four employees -- and you are out of cash to meet the next payroll. You estimate you need 30,000 euro to survive the next three months and to come up with a supercool store design to be able to participate in the competition. You have the following four options:

1. Borrow from your girlfriend's parents -- they are not overly wealthy, but could probably get their hands on 30,000 euro if they needed to.
2. Borrow from some old friends from the university and your old student job.
3. Convince your parents to take out a mortgage on their house.
4. Convince your employees to wait out the period.

Which of these options would you choose? Why?

Problem 4: Financing

Your store design has won the first prize in the New talent category at the 'Architecture meets Catering' competition. This in turn has led to inquiries from large coffee suppliers such as Nestlé Netherlands B.V. to market the concept (with full multi-media exposure) nationally. You estimate that it will take you six months to develop the concept in more detail and about three months after that to actually roll it out on three main channels -- Web, national newspapers and national TV. The coffee will be priced at 1.90 euro per cup of coffee in the new coffee corner. This is special coffee. You estimate that you will need 150.000 euro till break even (by the third quarter of the second year) -- this includes enhancing the concept, putting in place excellent (support) staff, full-blown advertising and web links, and the development of a small direct sales staff for selling on site.

You estimate the following sales projections for the first five years (You are at the beginning of Year 1 now):

	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	€ 100,000	€ 150,000	€ 300.000	€500.000	€1 M
Profits	€ < 0	€ 20.000	€40.000	€200.000	
	€300.000				

You have three financing options:

Option 1

A venture capitalist who specializes in startup companies in catering and adjacent areas, is willing to finance you € 150.000 for 48% of your company.

Option 2

A friend of the family who has extensive experience in catering is eager to go into partnership with you -- for 33% of the company. He is able to invest €150.000 but wants to work for the company at a base salary of €40,000 per year. He agrees to accept a minimum level of €30,000 for the first two years to keep his family going and defer the rest to when the company starts making money. You like and respect this man and have no personal feelings against him.

Option 3

You can continue the company with internal cash flow -- grow at a much slower pace. Which option would you choose? Why?

If the venture capitalist is also willing to take only 33% of the company, which option would you choose?

Problem 5: Leadership/Vision

You have found the financing and have signed a contract with two major coffee suppliers to market your product. You have hired new staff and moved into new premises. A national newspaper is doing a series of stories on local entrepreneurs and wants to do a story on you -- you know that this interview would be a defining moment in the development of your company and you see this as an opportunity to convey to the world (and to your new employees) your vision for your company's future. This newspaper article series has been very successful; it routinely gets picked up by other national papers and TV networks. One of the reasons for its success is its headline which consists of a one-line quote that captures the entrepreneur's vision for the company -- to be achieved by the year 2012.

You have come up with several possibilities for the one-liner:

1. Starbucks is the past -- *Coffee inc* is the future.
2. We aim to have at least a thousand employees by the year 2014.
3. The fastest growing coffee caterer.
4. Invest in *coffee inc*—Enjoy the Dutch tradition.

Which one of the above do you choose? Why? If you do not choose any of them and want to come up with ideas for an alternative, please do so.

Problem 6: Product Re-development, Part One

You are almost at the end of your fifth year in operation -- you have just managed to break even (later than you projected). You have opened the doors to all three segments (students, staff, visitors). Sales, while they are steady and continuous, are rather 'colourless' and you start doubting whether you will ever reach your growth targets. You decide to conduct a serious market research initiative in order to find out how to grow your sales. You organize focus groups with both existing customers and potential new customers. The main problem seems to be the "great divide" between the regular coffee and the specialized products. Over 90% of the participants in your focus groups find the regular products very interesting. But when it comes to the specialised coffees, there is a clear division of opinion. The participants who primarily enjoy the regular coffees almost *never* bother to go and buy more expensive coffees and wonder why all that '*elite stuff*' is there; and those who are primarily interested in the specialised coffees think that the regular products downgrade the atmosphere.

How do you respond to this feedback?

Problem 6: Product Re-development, Part Two

You go back to the origins and think of a concept which could provide solutions to both parties. You come up with a solution in which you have 1 existing shop and 1 new shop. Shop number 1 (the existing shop) is for more regular coffees, the new shop is for exclusive coffees and teas. With the exclusive shop one should think of specialized Asian, South American and African coffee specialties, which would result in a total amount of 30 different types of coffee. Teas will come in a variety of 20 types. Also, exclusive cakes and pastries are sold. Next to this, customers can also borrow books, read newspapers and have access to free wireless internet. In the regular coffee booth, you plan to sell 8 different regular coffees, like plain cappuccino, espresso, etc, and add 5 regular teas (e.g. China Blossom and Rooibos) and limited variety of donuts and muffins.

You first start to promote the idea with the exclusive shop with a variety of 15 different coffees and 15 different teas, and also a smaller variety of cakes and pastries than you eventually will include. This together with free newspapers and free wireless internet is what you show to the focus group. It turns out that especially the exclusive shop is received very enthusiastically and customers are willing to pay 2 to 2,5 times as much as asked previously.

One of the requirements is however that you have to extend to what you had in mind (the 20 teas, 30 coffees, the books, newspapers and free wireless internet). You have to decide whether to undertake this massive concept change or to focus completely on one of the two concepts. If you want to extend it will cost you as much as 200.000 euro and a separate marketing effort.

Year	1	2	3	4	5	6	7	8
Estimated Sales (€M)	0.10	0.50	1	6	12	18	24	30
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2			

Which of the two options do you choose? Why?

Assuming you have decided to go in for the extension, you have to choose one of the following three options:

1. Undertake the redesign effort in-house -- Estimated Cost: €250.000 .
2. Out-source the redesign to the new company within your home-country--
Estimated Cost: € 200.000

3. Out-source the redesign to the new company outside your home-country--
Estimated Cost: € 100.000

Which option do you choose? Why?

Problem 7: Growing the Company, Part One

You are almost at the end of the sixth year of business. You are now running two types of shops—under the umbrella of Coffee inc.

- Plain Coffee (sales between 1.00 – 5.00 euro) where you sell a limited amount of regular coffees and teas and a basic amount of donuts, muffins and chocolates
- Exquisite (sales between 5.00 – 10.00 euro) where you offer the 'complete picture', so the special tea & coffees, wifi, special cakes, etc.

Your number of outlets and therewith the new coffee shop managers has swelled to twenty from the original three and you are continuing to expand your sales force and develop an even better concept of Exquisite for more upscale areas in town (outside the university). Greg Thomas, who is an excellent salesman (dealing with the regular coffees previously) and has headed the sales team since Day One, has clearly not kept up with the issues of growing the company -- he is definitely not the person to lead the new Exquisite. How will you deal with this situation?

Year	1	2	3	4	5	6	7	8
						Revised		
Estimated Sales (€M)	0.10	0.50	1	6	12	6	12	20
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2	8.6		

Would you:

1. Fire him?
2. Hire a new sales manager to head the sales team? If so, would you consult with Greg before doing so? How would you break the news to him?

Please feel free to elaborate on any other way of dealing with the situation.

Problem 7: Growing the Company, Part Two

Although the company has been growing for a while now, you are trying to keep the entrepreneurial culture of the company alive. But you begin to notice that your partner is fostering a more “corporate ambiance” -- long and unnecessary meetings, complicated organization charts, colorful expense accounts, “consultants” to “optimize market potential”, and so on. When you try to talk with him about it, he argues that it is time for the company to go “corporate” -- that such a “professional” image would actually be good for the bottom line.

Year	1	2	3	4	5	6	7	8
						Revised		
Estimated Sales (€M)	0.10	0.50	1	6	12	6	12	20
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2	8.6	20	27.5

How will you deal with this situation? Do you think it is time for *Coffee Inc.* to go “corporate”?

Problem 8: Hiring Professional Management

You are now in the eighth year of your company. You are doing very well -- surpassing growth targets and building reliable market share. Your sales are €27,5 Million and you project a growth rate of at least 25% per year for the next three years.

Year	1	2	3	4	5	6	7	8
						Revised		
Estimated Sales (\$M)	0.10	0.50	1	6	12	6	12	20
Actual Sales (\$M)	0.14	0.48	0.84	2.8	4.2	8.6	20	27.5

Your Board's advice is to hire professional management to run the company so you can focus on issues of new growth and new strategic initiatives. Assuming you have already developed a short list of three high-potential candidates to interview for the position of **Chief Operating Officer** (COO), how would you prepare for the interview?

List questions you would ask, techniques you would use, and critical issues you would take into account in hiring this person.

Problem 9: Goodwill

At this point, you are approached by the principal of an inner city school in your area, who also works with 10 other schools such as hers -- she believes that Exquise could be a perfect learning environment for her students in her Catering study program.

She requests you to work with a couple of really enthusiastic teachers to develop some elementary learning materials for the students to work on in the Exquise shops. The project would mean not only an investment of €100.000 (approx.) for modifications, but also a substantial chunk of your time for about six months during development and then about 10 sessions of classroom participation per year for a couple of years at least.

Note: Your sales are €27,5 Million and you project a growth rate of at least 25% per year for the next three years.

Will you take the initiative for this project?

If not, why not?

If yes, would you:

- a) Donate the project?
- b) Sell it at cost?
- c) Sell it at your regular profit margin?

Why?

Problem 10: Exit

You are now in the tenth year of your company -- *Exquise* is a great success and thanks to your new targeted strategies, even *Plain Coffee* is growing satisfactorily. You have acquired three other profitable catering concepts. You are doing €45 Million in sales and project that you will reach €70 Million within a year. At this time you face two possible directions for your company.

Direction 1

Your accountants and bankers think that this is a good time for you to take the company public. The Initial Public Offering (IPO; new stocks) market is booming and catering is in a solid upward trend. They estimate you should make an initial public offering of 2 million shares at €30 per share. The company has a total of 12 million shares outstanding.

Direction 2

At this point in time, Starbucks approaches you and makes an offer for your company -- it seems they have decided to get in on the more exclusive segment and have decided to enter the arena through acquisitions -- they see you as a perfect fit for their strategy and offer you €300 Million.

Year	1	2	3	4	5	6	7	8	9	10
						Revised				
Estimated Sales (€M)	0.10	0.50	1	6	12	6	12	20	30	45
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2	8.6	20	27.5	38	70

Which of the above two directions do you choose? Why?

End

Appendix 2: Questionnaires

Appendix 2.1: Questionnaire regarding entrepreneur's company

The following questions were asked in the questionnaire regarding the entrepreneur's own company, as described in chapter 3.2.1. The answer consist of a 5 point Likert-scale (ranging from 'do not agree' to 'fully agree'):

1. We analyzed long run opportunities and selected what we thought would provide the best returns.
2. We developed a strategy to best take advantage of resources and capabilities.
3. We researched and selected target markets and did meaningful competitive analysis.
4. We designed and planned business strategies.
5. We organized and implemented control processes to make sure we met objectives.
6. We had a clear and consistent vision for what we wanted to do.
7. We designed and planned production and marketing efforts.
8. The ultimate product/service that I used to launch this business was quite similar to my original conception.
9. Our decision making has been largely driven by expected returns.
10. The ultimate product/service that I used to launch this business was quite different from my original conception.
11. It was impossible to see from the beginning where we wanted to end.
12. We have allowed the business to evolve as opportunities have emerged.
13. We evaluated the set of resources and means we had at our disposal and thought about different options.
14. We experimented with different products and/or business models.
15. We started out very flexibly and tried to take advantage of unexpected opportunities as they arose.
16. We used a substantial number of agreements with customers, suppliers and other organizations and people to reduce the amount of uncertainty.
17. Our decision making has been largely driven by how much we could afford to lose.

Appendix 2.2: Life Optimism Test

The following is the revised Life Optimism Test as devised by Schreier (1994). A five point Likert scale (from strongly disagree to strongly agree) constitutes the answers:

1. In uncertain times, I usually expect the best.
2. It's easy for me to relax (filler item).
3. If something can go wrong for me, it will.^a
4. I'm always optimistic about my future.
5. I enjoy my friends a lot (filler item).
6. It's important for me to keep busy (filler item).
7. I hardly ever expect things to go my way.^a
8. I don't get upset too easily (filler item).
9. I rarely count on good things happening to me.^a (Goodman, Knight, & DuRant, 1997)
10. Overall I expect more good things to happen to me than bad (Scheier, Carver, & Bridges, 1994)

^a These items will be reversed scored before scoring and analysis.