SYSTEM CHANGE REQUIRES STRUCTURAL SPACE FOR 'MAKERSHIP'

A hermeneutic phenomenology study of field labs

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Abstract

This research reveals how entrepreneurs in the sustainable food sector ascribe meaning to their experience with the transformative value of a field laboratory. Sustainable entrepreneurs create ventures that contribute to a more sustainable food system and could benefit from support providers in scaling their idea. Applying a hermeneutic phenomenology philosophy using semi-structured interviews and journals, provides unique insights into the lived experience of the participants. It highlights the entrepreneur's developed ability to critically evaluate, enabled by other people's support, feedback and the role of identity through a transformative process of learning. These insights provide guidance for field labs and sustainable entrepreneurs alike.

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1. Introduction

There is a saying, “God created the earth, but the Dutch created The Netherlands”. The idea behind this is that The Netherlands was artificially created in a place where there used to be only sea. It stems from a time in which water was our common enemy that needed to be conquered. These days we face similar environmental problems with comparable complexity such as the climate crisis, loss of biodiversity, and increasing pollution (Meadows & Randers, 2012; Steffen et al., 2015). Earth’s population is expected to reach 9.1 billion by the year 2050 (Foti, Sturiale, & Timpanaro, 2018). This poses challenges regarding how to feed people so we can keep up with this ‘hyperexponential growth’ (Varfolomeyev & Gurevich, 2001). Meanwhile, around a third of all food produced is lost, wasted, and therefore not consumed (Lipinski, 2013; Stenmarck et al., 2016; Thyberg & Tonjes, 2016). Halving post-harvest food waste by 2030 is a much more effective strategy for reducing greenhouse gasses than any plan that does not consider it (Slorach, Jeswani, Cuéllar-Franca, & Azapagic, 2020). The United Nations’ Sustainable Development Goals (SDGs) describe this in their sub-goal 12.3 as part of having more responsible consumption and production (United Nations, 2015). As of 2021, we have reached a mere 13.6% of this target, meaning progression has been unchanged since 2016 (Sachs, Kroll, Lafortune, Fuller, & Woelm, 2022; United Nations, 2023).

Despite countries scrambling to stick to their targets, citizens, business owners, and policymakers have a growing sense of urgency to take part in this transition to a more sustainable future (Hockerts & Wüstenhagen, 2010; Lafferty & Meadowcroft, 2000). To contribute to this sustainability transition, innovation is seen as an essential driver (Schaltegger & Wagner, 2011), which connects sustainable development to entrepreneurship by defining entrepreneurship as an innovative process of creating market disequilibria (Schumpeter, 1934).

One example of how practitioners are experimenting with ways to innovate in favour of sustainability is the emergence of field labs (Kok et al., 2023). A field lab is a testing ground where multidisciplinary teams can experiment and make new products and services (Pappot, 2022; Stolwijk & Seiffert, 2016). These outputs are mostly meant to be commercialized and often aim to impact a larger societal issue (De Heide, 2016). Like the more well-known, synonymously applied term ‘accelerators’, field labs seek to provide small businesses with the necessary tools and resources to grow. This transformative value offering by the field lab can

be quantitatively measured based on traditional metrics such as turnover, return on interest, customer satisfaction and funding. However, while much research takes this approach when evaluating the effectiveness of such initiatives, evidence suggests sustainable entrepreneurs require different treatment based on their unique take on entrepreneurship (Fellnhofer, Kraus, & Bouncken, 2014; Goudswaard & Oosten, 2022; Speckemeier & Tsivrikos, 2022). This warrants an alternative approach using qualitative insights to develop a deeper understanding of this phenomenon, through the experience of the entrepreneur. I choose to highlight the entrepreneur's experience to understand from their point of view, whether field lab programs are worthwhile pursuing or not. This allows me to collect data beyond the standard and generalised economic metrics and target a specific type of entrepreneur. Lange (2018: 23) elaborates on this approach in her research that looks at entrepreneurs in general that participate in business incubators/accelerators (BIAs). She argues that a positive experience for entrepreneurs impacts society in several ways, mainly by improving the offering for future startups which increases the chance of future business success and by inspiring others to partake as well, fuelling business dynamism. In addition, it is beneficial for entrepreneurs to invest time in finding the right fit, as well as determine whether engaging with this phenomenon is worth it to begin with (Lange, 2018: 93). It is therefore worthwhile to uncover what aspects of field labs/accelerators add the most to supporting sustainable entrepreneurs in the food industry.

This research builds on the knowledge that sustainable startups have distinctive characteristics and face unique challenges in their attempt to develop their concept (Fellnhofer et al., 2014). They might adopt business models that account for the social and environmental dimension (Bocken, Short, Rana, & Evans, 2014; Boons & Lüdeke-Freund, 2013; Kuckertz, Berger, & Gaudig, 2019), or acquire funding through non-traditional channels because their ideals and objectives do not align with the traditional investment community (Linnanen, 2005). SEs encounter distinctive barriers such as the need to establish legitimacy through activism (Dawo, Long, & de Jong, 2023) and the side effects of leading with ethical reasoning (Gast, Gundolf, & Cesinger, 2017). During this process of sequentially pursuing a triple-bottom-line approach combining economic, social and environmental goals (Belz & Binder, 2017), the SE develops a unique empirical perspective on value creation.

Despite a rise in the popularity of accelerator-type programs (van Huijgevoort & Ritzen, 2012), research on field labs is highly fragmented due to an abundance of definitions and

quantitative bias. In addition, little is known about to what extent this growing phenomenon contributes to the promotion of sustainable entrepreneurs(hip) (SE). Hence this paper aims to uncover how SEs experience initiatives like field labs that provide a space for activities such as experimentation and knowledge sharing. The author will interview sustainable entrepreneurs in the food industry based in The Netherlands. The startups all have proof of concept and seek to scale their idea. With this approach, the research seeks to answer the following question: *How do entrepreneurs in the sustainable food industry ascribe meaning to their experience with the transformative value of field laboratories?*

The paper is structured as follows. First, in the literature review, I present the type of entrepreneur this research engages with. Furthermore, I dissect the field of innovation ecosystems by defining accelerators/field labs and explain their transformational effect as a result of learning from experience. I then finish the review by stating the philosophical underpinnings of the research. Second, the methodology section presents the design of the research as well as the strategy for collecting and analysing data. Third, the result section describes the findings of the analysis regarding the dominant themes that emerged. Fourth, the discussion section extends the findings to create an understanding of the phenomenon as a whole, and the paper closes with a conclusion.

2. Literature Review

2.1 SE in the food industry

Entrepreneurial ventures play an important role in the development of the economy. Startups and SMEs make up a large majority of the country's enterprises (Zimmerman, 2008) and with that provide over half of employment in the European Union (Hosseininia & Ramezani, 2016). Despite entrepreneurship-fueled economic development continuing worldwide, this development does not seem to account for societal and natural factors that are often sidelined as externalities (Pacheco, Dean, & Payne, 2010). This negligence has become an urgent problem on the agenda that can no longer be ignored, evident by the increase in economic, societal and environmental disasters we are facing today. Scholars agree that a generally accepted definition of (sustainable) entrepreneurship is absent (Veciana, 2007; Zimmerman, 2008). Schaltegger and Wagner (2011) define SE as: "a business approach in which businesses engage in sustainable business practices to achieve efficiency and competitiveness

by balancing the impacts of their environmental, business, and social activities." Other terms have been related to SE, such as ecopreneurship or environmental/social entrepreneurship, however, SE is considered its own type, as it aims to combine all three value creation dimensions (Terán-Yépez, Marín-Carrillo, Casado-Belmonte, & Capobianco-Uriarte, 2020), with a focus on creating longevity (Greco & de Jong, 2017). An important aspect of SE is that it innovates in its context, and therefore should not be analyzed outside of it to get the right impression (Rosário, Raimundo, & Cruz, 2022). Traditional entrepreneurship often follows the dominant strategy of engaging in environmentally degrading activities in favour of a system that fails to promote sustainable practice (Pacheco et al., 2010). The initial phase of opportunity identification in venture creation as a process of emergence (Davidsson, Low, & Wright, 2001; Steyaert, 2007), allows entrepreneurs to showcase agency in changing this dominant incentive structure (Pacheco et al., 2010). Provided that they can acquire the necessary resources and assets (Shane & Venkataraman, 2000).

Sustainable entrepreneurship is only relevant in its context, which many entrepreneurs consider to be our global food system. This complex system consists of many adaptive interrelations between actors ranging from production to consumption, and from business to the climate (De Bernardi & Azucar, 2020). In this context, entrepreneurs seek to boost innovation in favour of transforming the food system by developing the right innovations and engaging in stakeholder collaboration. Food startups are the ones able to move away from a 'closed' system to an open innovation ecosystem that promotes knowledge sharing and alliances (Rexhepi, Hisrich, & Ramadani, 2019). These alliances stretch beyond the main actors and involve universities, research and development centres, incubators, accelerators and field labs (De Bernardi & Azucar, 2020; Fitzgerald & Cunningham, 2015).

2.2 Incubators, accelerators and field labs

Incubators foster entrepreneurship by promoting value creation, innovation, the creation of new firms, and economic development (Amorós & Bosma, 2014; Theodoraki, Messeghem, & Rice, 2018). The logic behind this is that a vast majority of startups fail, which aside from bad ideas is generally due to a lack of managerial skills and funding (Peters, Rice, & Sundararajan, 2004; Silva, Fabrício, da Silva Pinto, Galegale, & Akabane, 2015). Incubator-type programs can play an important role in the SEE by assisting new value creation with the necessary resources as they become relevant during the development process. (Cohen, 2006; Klofsten & Lundmark, 2016; Spigel, 2017). Incubators vary with respect to structure and

operations but typically stand at the beginning of a venture's journey, with an undeveloped idea and mission statement often being the only entry requirement (Grimaldi & Grandi, 2005; Sanyal & Hasim, 2018). Other consistent traits are shared space, access to services and facilities, assistance/coaching and networking (Peters et al., 2004). Incubators have existed since the 1950s but their identity has evolved significantly since the digital revolution in the form of a shift towards developing technology (Chinsomboon, 2000). Research & development and networking services have therefore become a core element of many incubator programs as well (Grimaldi & Grandi, 2005).

It comes as no surprise that incubators have changed over the years since their general aim is to assist innovation which requires them to be adaptive and future-oriented. Incubators are similar to universities in that regard, which might be why that is a common place for them to spawn, allowing universities to bring their created knowledge into practice in the form of intellectual property (Hayter, 2016; Theodoraki et al., 2018).

The rules of the game have changed since the standard venture capitalists and network incubators from the 1990s (Hansen, Chesbrough, Nohria, & Sull, 2000). Entrepreneurs have different needs such as speed to market, business models, local databases and technology development (Bjerke & Hultman, 2004; Doganova & Eyquem-Renault, 2009; Eisenmann, Ries, & Dillard, 2012; Sexton, Upton, Wacholtz, & McDougall, 1997). Like the invention of the internet and the digitalization of industries, authors have proposed that sustainability is the next wave of influence that will require incubators to adapt (Küçüksayraç, Keskin, & Brezet, 2015; Volkmann et al., 2021). This means incubating sustainable entrepreneurs as well as providing an environment and program that promotes a sustainable vision that is measurable through quantitative and qualitative methods (e.g., cradle-to-cradle, life cycle assessment) (Bergmann & Utikal, 2021; Fonseca & Jabbour, 2012).

Another, more recent phenomenon in this trend of support entities for entrepreneurship is the accelerator model. Accelerators help ventures with proof of concept to launch prototypes, identify customer segments, hire people, and acquire resources, including capital. These programs take on so-called 'cohorts' of entrepreneurs and set them up with a workspace and pre-seed capital (Cohen & Hochberg, 2014; Miller & Bound, 2011). Activities are similar to the incubator variant while working towards different objectives based on their key stakeholders (Pauwels, Clarysse, Wright, & Van Hove, 2016). Pauwels et al. (2016) further

argue that whereas incubators differ in their offering based on their portfolio's needs, accelerators differ based on financial shareholders' objectives. Another major difference is the limited timeframe in which a participant is involved in the program (Isabelle, 2013). Incubators and accelerators are both new fields of research with a sparse research history to draw from. Despite these organisations' compelling logic, it remains unclear whether these partially defined concepts will stand the test of time. Combining this with the rising popularity of this phenomenon and the efforts to adhere to sustainability demand, presents an interesting gap in the literature. For this research, the term 'field lab' is used, because it is more commonly used in the Dutch context. A noteworthy difference is the fact field labs combine the public and private elements that accelerators are usually divided into, due to their ambition to strengthen the ecosystem they are even more closely involved with (De Heide, 2016; Stolwijk & Seiffert, 2016).

2.3 Existential learning theory

Central to this study lies the idea of learning by doing (Rogers & Freiberg, 1970). Research on entrepreneurship has found that entrepreneurial learning processes can take different forms, such as congenital learning, experiential learning, vicarious learning, and so on (Huber, 1991; Kolb, 1975). Kolb (1975) describes entrepreneurial learning as consisting of acquisition (experience) and transformation (acquired knowledge). Moving beyond definitions of learning, this research applies a continuation of Kolb's (1975) theory of experiential learning, namely Jarvis' (2010) "existential" theory of learning. His ideas revolve around adult learning and how they are "socially" and "situationally" constructed. This constructivist inclusion of the situational factors in addition to his understanding of the learner as a "whole person: body, mind, self – life history" (Jarvis, 2006: 23), is what makes this model of adult learning fitting for sustainable entrepreneurship research (Levinsohn, 2015). Adult learning as opposed to child learning refers to how individuals construct their identity based on the meaning they attach to experience. This learning generally happens subconsciously or "in the preconscious" and results in incidental learning that is suggested to contribute to attributes such as identity and self-confidence (Jarvis, 2006; Levinsohn, 2015).

Entrepreneurial learning, viewed as a transformation of experience (or what Reuber, Dyke, and Fischer (1990) refer to as "experientially acquired knowledge") is an example of adult learning that can be purposefully engaged with or left to our preconscious mind (Cope, 2005; Jarvis, 2012; Mezirow, 1990, 1991; Politis, 2005). Jarvis further emphasizes that conscious learning is always accompanied by incidental learning. When Jarvis' theory of preconscious

and purposeful learning is combined with the entrepreneur's competencies and capabilities, the relevance of the concept becomes clear. Examples of these are opportunity and social competence (Lans, Blok, & Wesselink, 2014), and scholars have identified a separate framework for SEs, which includes several capabilities such as system-thinking and foresight (Dentoni, Blok, Lans, & Wesselink, 2012). These competencies and capabilities often originate from the preconscious or purposeful engagement (Gibb & Ritchie, 1982), and are therefore learned through experience. Furthermore, entrepreneurial learning has been positively related to organizational performance through e.g. an indirect link with self-efficacy (Shen, Wang, Hua, & Zhang, 2021). This suggests that measurements of a startup's performance in its distinctly nascent stage (Gibb & Ritchie, 1982; Roša & Lace, 2018), are influenced by personal attributes that can be transformed through purposeful learning in (in)formal learning environments.

2.3.1 Transformative Potential of field laboratories

Jarvis (2006: 66) describes the process of learning as starting in a state of harmony when we take our current situation for granted, and suddenly our biography (past) no longer aligns with our interpretation of our experience (present), after which we suffer "disjuncture" from which we can learn and re-establish harmony (future). Disjuncture, therefore, serves as a motivator for learning (Jarvis, 2006: 77). A nascent entrepreneur, is somebody who is less experienced and engaged in activities that are intended to benefit their new venture (Gibb & Ritchie, 1982; Reynolds, 1994), suffers when faced with complexity, ambiguity and growing pains (Muñoz-Bullon, Sanchez-Bueno, & Vos-Saz, 2015). This is especially true for SEs as they attempt to create value in more than one dimension (Dacin, Dacin, & Tracey, 2011; Thompson, Kiefer, & York, 2011), which often links them to "wicket problems" or expensive sustainability trade-offs which calls for a more holistic approach (Binder & Belz, 2015; Pacheco et al., 2010). Field labs have found a way to help entrepreneurs by creating and transforming disjuncture in favour of assisting in their new venture process (Cohen & Hochberg, 2014; Hochberg, 2016; Stolwijk & Seiffert, 2016). As described in a previous paragraph, they achieve this through activities such as lectures, coaching, and allowing finding investors. Hallen (2014) argues that the value entrepreneurs experience through participating in an accelerator is due to the learning-oriented activities facilitated by the program. However, the literature is generally unclear about how entrepreneurs value these programs, especially SEs since most accelerators are less than a decade old and sustainability as well as firm survival only become apparent over a longer period (Casasnovas & Bruno, 2013; Jones & York, 2018;

Lall, Bowles, & Ross, 2013). For this research, I focus on the transformation of experience that takes place and how entrepreneurs attach meaning to it. Levinsohn (2015) accurately summarizes Jarvis' (2006) description of this transformation into meaning by stating that: "as the individual progresses through life it is the meaning attached to sensations that are memorized (and later recalled from memory), and not the sensation itself. In other words: when a disjuncture occurs it is transformed by the person into meaning. This meaning may take the form of, for example, knowledge, skill, emotions, values, and attitudes."

2.4 Philosophical underpinnings - hermeneutic phenomenology and lived experience

The concept of meaning and interpretation encompassed key concerns related to the hermeneutic-phenomenological attitude, hermeneutic circle, and the fusion of horizons. According to Merleau-Ponty (1962), the goal of phenomenology is to describe a phenomenon and has description, reduction, essence and intentionality as key characteristics regardless of ideology. Husserl, the founder of the philosophy of phenomenology, re-emphasized a focus on subjective experience in philosophy (Suddick, Cross, Vuoskoski, Galvin, & Stew, 2020). He believed philosophy should account for "conscious recognition" which involved human perception of reality, and their lived experience (Williamson, 2005). Through "intentional" engagement with a phenomenon, and by "bracketing" our preconceived understanding, we can arrive at a pure essence of the studied phenomenon (Fitzgerald & Pearson, 1996). Heidegger developed an interpretive or "hermeneutic" take on Husserl's descriptive or "transcendental" approach (Suddick et al., 2020). Hermeneutic phenomenology, the study of being, aims to unveil the world through a subject's subjective experience, their "life world stories" (Kafle, 2013). It is more concerned with interpretation than achieving reduction Heidegger introduced the concept of "Dasein", which means "being-there" or "existence." He emphasized human existence as always situated in a particular world, interconnected with other beings and the environment (Low & Sturup, 2018). Research using the hermeneutic tradition is grounded in philosophy and exemplified by scholars such as Martin Heidegger, Hans-Georg Gadamer and Paul Ricoeur (Ho, 2016). The main challenge is describing the information that emerges without compromising it with our pre-understanding and theoretical findings (Van Manen, 1990: 184). The phenomenon is studied by moving back and forth between highlighting the experience of the individual and generating an understanding of the shared experience as a whole, using the Hermeneutic Circle and fusing the participant's and researcher's horizons of meaning.

3. Methodology

The goal of this research is to understand a phenomenon through the lens of SEs' experience with this phenomenon (the transformative value of field labs). The philosophy and qualitative methodology of Hermeneutic Phenomenology is chosen because fits this goal with its emphasis on the "experimental, lived aspects of a particular construct" (Nelson, 2011; Van Manen, 1990). It is a "research methodology aimed at producing rich textual descriptions of the experiencing of selected phenomena in the lifeworld of individuals that can connect with the experience of all of us collectively" (Kafle, 2013). From this, a deeper understanding of the experience is developed (Ajjawi & Higgs, 2007).

For this interpretive study, five SEs at food startups and SMEs have been interviewed to understand their experience with participating in a field lab. Cases are purposefully selected based on similarities in operations and values, from the alumni portfolio of large startup accelerators in the Netherlands. These portfolios were found and contacted via the accelerator's website and their LinkedIn has subsequently provided additional leads by the use of snowball sampling (Noy, 2008). The alumni cohorts were contacted directly via e-mail with the proposition to do an in-person interview. Three interviews ended up happening digitally using Google Meets, due to considerations of time and distance. All participants had proof of concept and were looking to develop and scale their businesses. The number of active years as an official venture ranged from 2 to 6 years, with their experience with an accelerator happening on average around one and a half years after launch. Accelerator programs lasted anywhere from three months to a year and fluctuated in levels of intensity. The SEs had different backgrounds and were at varied stages of their career and specifically as entrepreneurs. The benefit of having such a diverse set of participants is the variety and richness of the data, which is valuable in interpretive research. Due to the small sample size and limited timeframe, all five entrepreneurs have been subjected to in-depth data collection.

3.1 Data collection

Primary data has been collected over four weeks using in-depth semi-structured interviews that lasted around 45 minutes to an hour. The interviews started with an introduction about the research and with gathering a description of the event(s) that occurred. In addition, before the start of the interview, the interviewee will sign a consent form and permit recording audio. The interviews followed Bevan's (2014) structure of contextualization (natural attitude and

lifeworld), apprehending the phenomenon (modes of appearing, natural attitude), and clarifying the phenomenon (imaginative variation and meaning). This approach provided validity and trustworthiness to a method that is relatively susceptible to methodological criticism (Aldea, Carr, & Heinämaa, 2022; Beck, Keddy, & Cohen, 1994). The cases are all located in The Netherlands and the interviews are physically conducted to build rapport and gain the participant's trust. The interviewees are the founder of their businesses and can provide insight into the experience of joining a field lab. The participants were present during most, if not all, of the activities in the field lab program. Their businesses are contributing to the transition towards a more sustainable food system and work with e.g. circular short supply chains or protein alternatives. Interviews consist of several open-ended questions that probe the interviewee to hone in on recalling and expressing the experience. This 'directive' approach is meant to "encourage the emergence into consciousness in the pre-reflective dimension" which avoids receiving basic answers (Høffding & Martiny, 2016). The interviewee was encouraged to tell the story of their experience. In addition, a contemplative log is maintained during each phase of both the data acquisition and interpretation. These descriptions were continued and reflected upon during the data analysis as they involved the researcher's perception of the phenomenon based on prior understanding of the concept.

3.2 Data analysis

For this interpretive data analysis, I adopt the framework by Alsaigha & Coyne (2021) based on Gadamer & Figal (2007), which integrates the five steps and six stages of analysis by Fleming, Gaidys & Robb (2003) and Ajjawi & Higgs (2007) respectively. This framework lays out the following nine steps:

- Choosing an appropriate open research question.
- Identification of pre-understandings.
- Gaining understanding through dialogue with participants (interviews and diaries)
- Transcribing/iterative reading/preliminary interpretation of texts to facilitate coding/identifying first-order (participant's horizon) constructs.
- Identifying second-order (the researcher's horizon) constructs = integration.
- Meshing the horizons/themes are developed and challenged by the researcher = aggregation.
- Linking the literature to the themes identified.

- Critique of the themes/reporting final interpretation at this point in time (fusion of horizons).
- Establishing trustworthiness.

Important biases and limitations are accounted for in the conclusion chapter. Within 72 hours of the interview, the audio recordings were carefully transcribed manually in Microsoft Word and coded using Atlas.ti (version 23.1.2.0), powered by OpenAI (Friese, 2019; Scientific Software Development GmbH, 2023), a reliable software program used by universities. The transcripts are read and compared to the researcher's journal to avoid biases and ensure validity (Bell, Bryman, & Harley, 2022). Coding sets are formed in a spreadsheet by relating important interview results to the corresponding category and sub-category. From these structures, themes have been formed that provided input for the result section.

4. Results

Five themes emerged that showcase how SEs in the food sector ascribe meaning to their experience with the transformative value of the field lab they participated in. Each finding is grounded in relevant quotes with the participant number identified.

4.1 Theme 1: Variety in content offered

Participants evaluated whether or not the activities that were offered, were useful to them. Usefulness is an important metric by which the entrepreneurs evaluated their experience with the offerings. The activities of the field lab were considered hit or miss and depended on the entrepreneur's background experience and needs. Several participants described activities as "repetitive" (P1, P2, P3) and "nice to have, but not necessary" (P2, P5). Others described their participation in activities more positively, stating that they e.g. derived value from iterating their business model (P1, P2, P3, P5), or experienced workshops as a nice starting point for learning new things (P1). Participant P5 highlighted this variation by saying:

"Let's think again which topics were... negotiating, for example, was one of them. Yes, that one was nice to partake in for a while. Of course systems thinking, which I didn't find very strong. Bits about storytelling. Bits about, what does a dream team consist of? So yeah, you get something out of it every now and then, but not in completeness." 5:27 ¶ 135 in P5

All participants agreed that this was caused by a high variety in content, as a result of the field lab providing a standard program for businesses in different stages and with diverse needs. Whenever entrepreneurs felt like they were in the wrong startup stage for the activity to be relevant, they either skipped the activity or sat through it anyway. This separation from the offering, physical or cognitive, prompted comparisons with other entrepreneurs and field labs. Comment from participant P5 exemplify this:

"We also had quite a different product from the other participants, so it was not quite in line with each other. There were scalable technological developments, so to speak, that were a bit further along than we were. So there was often a bit of an imbalance in what they were offering in terms of what they came up with or presented." 5:11 ¶ 75 in P5

Aside from reacting to this misalignment by avoidance or dissonance, participants P1 and P2 described ways in which they would have preferred to partake. They described how they would have reacted if the offering was different, or how they will approach selecting field labs from now on. All participants at times framed this learning as advice for other similar entrepreneurs, granted that this was hinted at by the interview question. The main differences mentioned were customizability (freedom) and relevancy/usefulness (timing).

4.2 Theme 2: Learning can originate from networking

Entrepreneurs came into contact with many people during their participation in the program. These people were either part of an internal or external network. Examples of internal parties mentioned by participants P1, P3, P4 and P5 are other participants in the program and trustworthy sources from the entrepreneur's existing network. External parties are mentors, experts and coaches, typically brought in by the field lab.

Entrepreneurs described the internal network as a source of learning. Participant P4 especially emphasized the importance of this in their experience by saying:

"So it's the reason I... well, one of the reason I became curious to join this program was actually meeting same (like-)minded people, especially focusing on the food, because I meet entrepreneurs, but I cannot talk about the issue I have." 4:4 ¶ 62 in P4

Participant P1 also thought this was valuable based on experience, as well as in general, saying:

"It's in any case good, I think, to share your plans with people, and you are sitting with a group like that, with different people who then look at it (the business) in different ways as well. So that alone is super valuable. And then at least you're in a network, which is always useful." 3:25 ¶ 92 in P3

There were no recorded instances of entrepreneurs having negative experiences with internal networks, not counting the designers of the program. All interactions were positive or neutral in nature and could even compensate for identified downsides that the entrepreneur was considering. Participant P2 noted this after describing the considerations by which the entrepreneur evaluated participation:

"Or there really need to be fantastic people that join" 2:35 ¶ 50 in P2

External networks were described as a mixed bag but overall proved to be a valuable source of knowledge and guidance. Industry experts were accepted as mentors because of their industry knowledge (P1), which for P1, P3, P4 and P5 was a distinct reason for joining in the first place. Participant P1 described this motivation to participate to gain access to the field labs ecosystem when stating:

"For us, that was something very important and for us, (the field lab) was kind of that door to the food sector and also just the (field lab's) ecosystem." 1:21 ¶ 29 in P1

Participant P4 emphasized the usefulness of external sources was due to the specificity of the expertise required to keep scaling. P1 and P3 underlined this point, by viewing external sources as not only providers of additional networks that reach beyond the ecosystem but also as valuable learning tools themselves.

4.3 Theme 3: Bottom lines as prerequisites allow for pragmatism

SEs dealt with having multiple dimensions to their business model. When asked in what way the field lab provided support for developing the sustainable side of the business, all participants described a lack of support or even consideration. Participants P1, P3 and P5

were fine with it and viewed sustainability as more of a starting point or prerequisite for the entrepreneur, and a selection criteria for the field lab. Participant P5 described this as:

"I don't know. In my experience, whether it was a sustainable company or not, it will both fit in terms of what the programme offered, whether they specifically looked at... Look, they wanted to coach sustainable businesses, because that's in their programme. That's, that's the idea of the (program), they specifically want to go and help the sustainable businesses. So in that sense, it seemed to me yes, the programme could also be unleashed on other scalable companies that are not necessarily sustainable." 5:14 ¶ 79 in P5

Participant P2 dealt with this separation by seeking sustainability advice and tools elsewhere. When asked the previously stated question, the participant answered:

" Yes, very little, I can be really short on that. Say, if you're talking about LCA and CO2 calculation that kind of agency. Yes, I didn't get any advice on that at all." 2:49 ¶ 62 in P2

The sustainability aspect was for participants P1, P2 and P5 simply a way to get into the program. They described utilizing their identity to comply with the selection-criteria of the field lab(s). All five participants were looking to scale their idea which to them meant reaching economic viability and getting funded. Participant P1 described this focus on economic viability while maintaining sustainability as part of their identity:

"That economic picture was actually trickier for us, because we had to kind of fit and measure the concept we had, into a business model, instead of starting with a good business model where you then think, oh, how do we make this more sustainable?" 1:29 ¶ 37 in P1

Participants P1, P2 and P3 described their focus on preparing their business for investors by listing activities such as filling in a business model canvas, learning how to pitch, etc. It was clear to them that funding was the most important objective for participating because it would “really” get the idea off the ground. These three participants described this by stating:

"In euros that was about 500.000. So that was nice. That allowed us to really start" 1:13 ¶ 9 in P1

"I would just like an amount so I can explore things " 2:17 ¶ 38 in P2

"Then we really should have had a fat chunk of money or something. But yeah, for that, we would also have had to have a good plan for the bank or something." 3:21 ¶ 80 in P3

All participants spoke of the venture capital pitch and funding as happening later during the program or even afterwards from other sources.

4.4 Theme 4: Critical evaluation at any point

Field lab participants critically evaluated the field lab and its offering, at any point during the participation. All participants said that during the program they were most critical.

Initially, participants evaluated the proposed offering in terms of cost, time investment and general aims of the program. Field labs typically do not disclose details about the program so participants also looked to their situation to see whether or not they needed help and what kind. This was expressed by participants P3 and P5, with P5 saying:

"So I thought well, that's now. Now is a convenient time because we now have some new products. The focus was on those (new product). That was still the least concrete in the sense that we were really looking for how can we sell that? So we really put focus on that product to see if we could develop it with (the field lab)." 5:6 ¶ 59 in P5

While getting accepted was sometimes uncertain, proposals to join were also initiated by the field labs themselves, and varied in attractiveness. Participants P1 and P2 described being surprised and appalled by some of the offers. Participant P2 was relatively critical during this stage, which they attribute to their experience with many different field labs. Meanwhile, participant P1 blindly joined the program.

During the active participation phase, entrepreneurs carefully evaluated the trade-offs of investing additional resources into showing up. Much of the weighing of options regarded the activities offered that could e.g. include a long travel distance, as mentioned by participant P4:

"It was a little bit far away to attend. I think the location can be more like some city like, well, Amsterdam. And then more people can come. And because most of the time it was in this like

new city, somewhere far away, it wasn't too far, but for me it was for example, almost taking like 2,5 hours by train." 4:29 ¶ 122 in P4

Lastly, participants evaluated the outcome of their participation in terms of personal growth, material and intellectual gains which often meant receiving laboratory space and networks, and initial survivability. Whether the participation was worth it, is unclear since all participants experienced this differently. Participants P1, P2, P3 and P5 referred to other programs multiple times during the interview, as well as other sources of value such as shared laboratories.

4.5 Theme 5: Programs should facilitate transformation through proactivity and initiative

According to participants P1, P2 and P5, during the program they were many instances in which the entrepreneur was confused as to why the program was designed this way. They believed that normally this process of participating in a field lab would go differently, with participant P5 describing themselves as an outlier among the cohort.

Participants committed fully to the program and had faith in its design. Participant P1 in particular, expressed a full adoption of the new structure, pace, place and expectations. Others experienced the start of the program as a catalyst for making some important decisions such as going full-time (P1, P3, P5). This was then met with a reactive approach which kept the entrepreneur in a situation they were already familiar with. Participant P5 described this by saying:

"I also think, they... what they could have done better is a certain set programme, a developed programme to help startups. They left the programme quite open like, well, what questions are you guys sitting with? And look, sometimes we didn't necessarily know what questions we were asking either. So basically, that we would be taken into that a bit more of Hey! maybe look at this, look at that, figure this out figure that out. Instead of us saying that we want to hear information about certain things." 5:16 ¶ 93 in P5

Related to his, participants P2 and P5 missed the opportunity to "do" something with the knowledge they gained. In addition, all participants suffered from a lack of resources upfront. This started in the terms and conditions phase, in which participant P2 exited the initiation phase because the field lab would not consider their confidentiality requirements. Participant

P2 understood that something like Covid-19 was too sudden to adapt to, but a lack of flexibility in other aspects was a deal-breaker.

5. Discussion

This research set out to answer the question: how do entrepreneurs in the sustainable food industry ascribe meaning to their experience with the transformative value of field laboratories? Five themes emerged from the data that provided the insights gained in this study. These themes are: variety in content offered, learning can originate from networking, bottom lines as prerequisites allow for pragmatism, critical evaluation at any point and programs should facilitate transformation through proactivity and initiative.

During the development or scaling process of the SEs venture, SEs describe running into problems that present as bottlenecks for the business. These bottlenecks need to be resolved which can be challenging for traditional and sustainable entrepreneurs alike (Hoogendoorn, Van der Zwan, & Thurik, 2019; Lüdeke-Freund, 2020). Field labs presented themselves as players in the overall ecosystem with the proposal to support entrepreneurs in facing these challenges. The field labs indirectly investigated in this research offered resources such as networks and funding, as well as activities such as workshops and coaching. This is very much in line with the literature on field labs/accelerators (Cohen & Hochberg, 2014; Spigel, 2017). Data suggests that a large variety of SEs exist, that operate in different stages of development with unique requirements for support. They evaluate the standardized, often unstructured field labs, based on their background experience and most urgent needs. Despite their rigorous evaluation process in various stages of participation, this results in activities being hit or miss. Furthermore, the other participants as well as experts, coaches and mentors facilitate a lot of the transformation happening during the program. The reason for this might be the lack of initiative by the program to provide a transformative experience, and therefore force SEs to create their own, using the next best source of knowledge which has to come from other SEs in the program. This lack of initiative relates to a finding regarding the unstructured nature of the program, which caused confusion and aimlessness among the cohort. SEs aim to immerse in a complete program with unique content and measurable learning outcomes. Instead, SEs describe how field labs outsource most, if not all, of their knowledge to external advisors. These experts are capable of answering people’s

predetermined questions but SEs do not know that which they do not know. In addition, this means that the knowledge SEs gain through workshops and mentorship etc., remains in what Jarvis (2006: 28) describes as the pre-conscious. Field labs do not sufficiently design moments of disjuncture that would prompt the SE to climb back to a state of harmony. They remain in the state of harmony they were already situated in. Jarvis calls this the main reason people do not learn from their experience (Jarvis, 2006: 76) SEs in the sample showcase this by stating they miss the ability to "do" something with their newly acquired knowledge. Data shows that the SEs often lack the budget or funding to facilitate this, which can be linked to the fact that field labs only provide capital in the later stages of the program. The burden of creating a space for transformation seems to fall on the participants, rather than the designers of the program. Webb and Shakespeare (2008) describe this occurrence as the result of the "student" having to undertake an unnecessarily laborious role.

Ultimately the sustainability aspect is used more as a useful identity that can move the business to new terrain, rather than a focus point during development. This is not unexpected, since the nascent concept of business accelerator-type programs is still grounded in traditional economics (Peters et al., 2004; Volkmann et al., 2021). This can be explained by highlighting their common aim to scale businesses up until the point of getting funded. However, it contradicts their aim to stimulate innovation in a future-oriented fashion (Grimaldi & Grandi, 2005; Theodoraki et al., 2018). It does explain the reason why SEs also describe economic viability as their main goal because to them it means gaining legitimacy. This is something SEs typically struggle with (Silva et al., 2015), which can lead to not having any sustainable impact at all. This suggests that SEs view field labs as serving a straightforward purpose of scaling up the business rather than offering sustainability-specific activities and resources. Therefore, it comes as no surprise that a common outcome of participation found in the data is exploring other options and acquiring resources from other third parties.

5.1 Limitations of the research

This research is located in the qualitative and interpretive paradigm and can therefore not be generalised beyond its context. In addition, the research deals with a small sample size, and even though significant amounts of data have been gathered, more participants from different programs would most likely add to the findings. To add to this, research that targets the entire cohort of one field lab and simultaneously references the characteristics of the field lab, would provide more detailed and transferable results. While the lived experience of SEs with the

phenomenon was clear, the research would have benefitted from more time spent going through the hermeneutic circle, and re-interpreting the data. While hermeneutic phenomenological data collection was supported by additional tools such as journals, participants might still suffer from unavoidable recall bias because their experience naturally took place in the past. Lastly, future research could look at field labs as a separate entity rather than a continuation of the incubator/accelerator literature. While it was appropriate for this research due to a focus on the entrepreneur's perspective, field labs are emerging with distinct characteristics and aims, which could prove interesting for a more design-based study. Examples of this are Circular Factory by BlueCity and Fieldlab Circular Ondernemen by Northern Innovationlab Circular Economy.

6. Conclusion

The food industry becoming more sustainable is important for reaching our sustainability goals, as it is an industry with many destructive sides to it (United Nations, 2015). With the growing urgency of food waste reduction, protein alternatives and circular products (Slorach et al., 2020), SEs are developing sustainable ventures that can contribute to these solutions (Bocken et al., 2014; Lüdeke-Freund, Carroux, Joyce, Massa, & Breuer, 2018). Parties in the ecosystem have emerged to support these entrepreneurs in their development. One type of organisation that does this is field labs (Goetheer & Butter, 2017). This study has provided valuable insights into SEs' experience with the transformative value of these field labs. Key to their lived experience is their developed ability to critically evaluate the worth, enabled by other people's support, feedback and the role of identity through a transformative process of learning. Findings suggest the SEs' experiences consisted of a large variety in content offered by the field lab, learning that originated from networking, bottom lines that are used as prerequisites which allow for pragmatic decision-making, critical evaluation at any point and programs that should facilitate transformation through more proactivity and initiative. The overarching commonality across themes is that field labs can provide significant support for SEs, given that they implement a structure in their program with a stronger narrative. This would make field labs better adapted to the shifting field of entrepreneurship towards being more sustainability-oriented. SEs are critical customers in all stages of participation and require customized advice and attention. Field labs could stimulate the distinct features of SE as well as food startups in general, by providing access to space and relevant information.

This research adds to the existing literature on field labs and SE, by providing unique qualitative insights into the entrepreneur's experience. These insights could be used by field labs to improve their offering, and by SEs to determine whether participation is a worthwhile endeavour.

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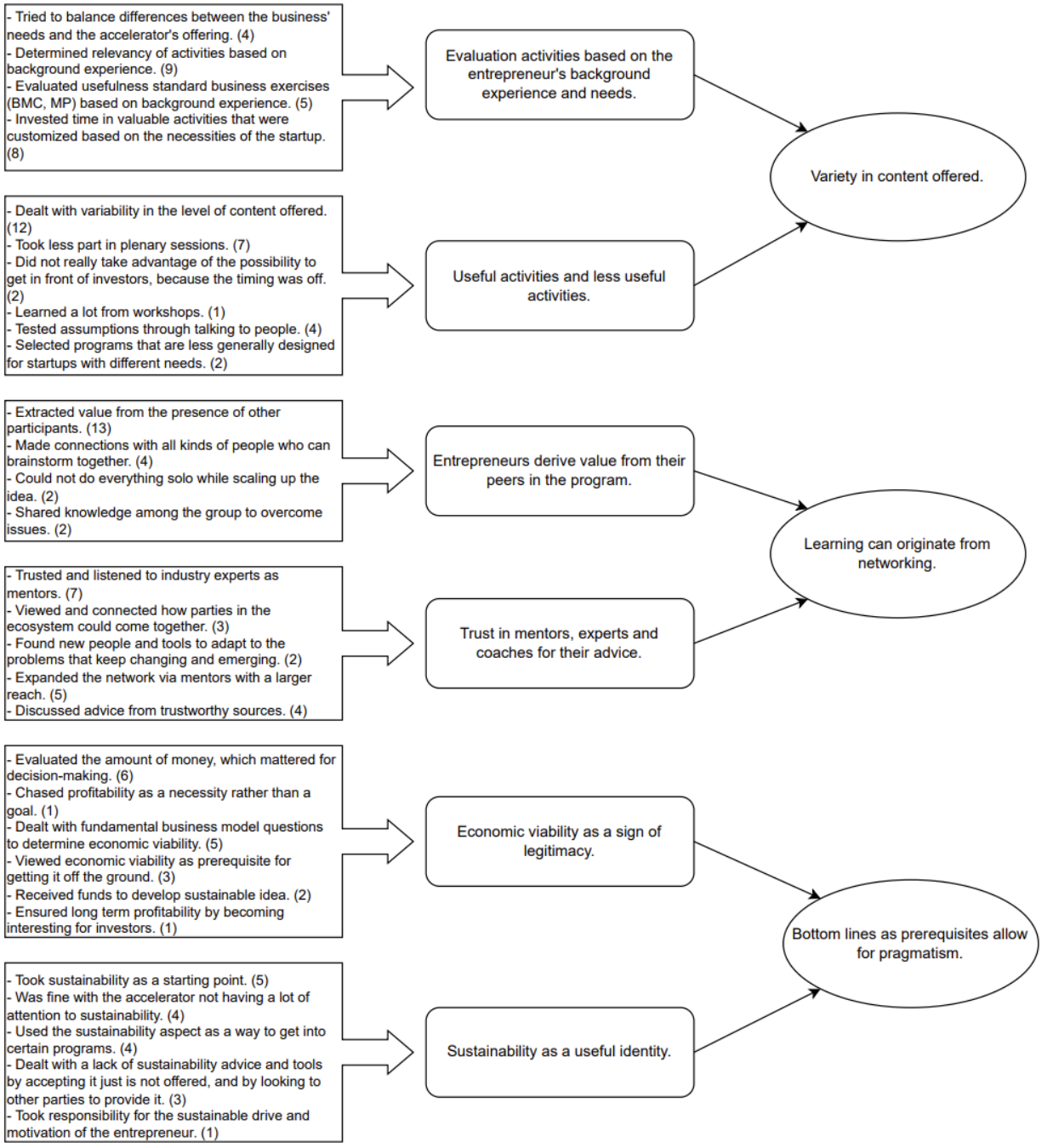
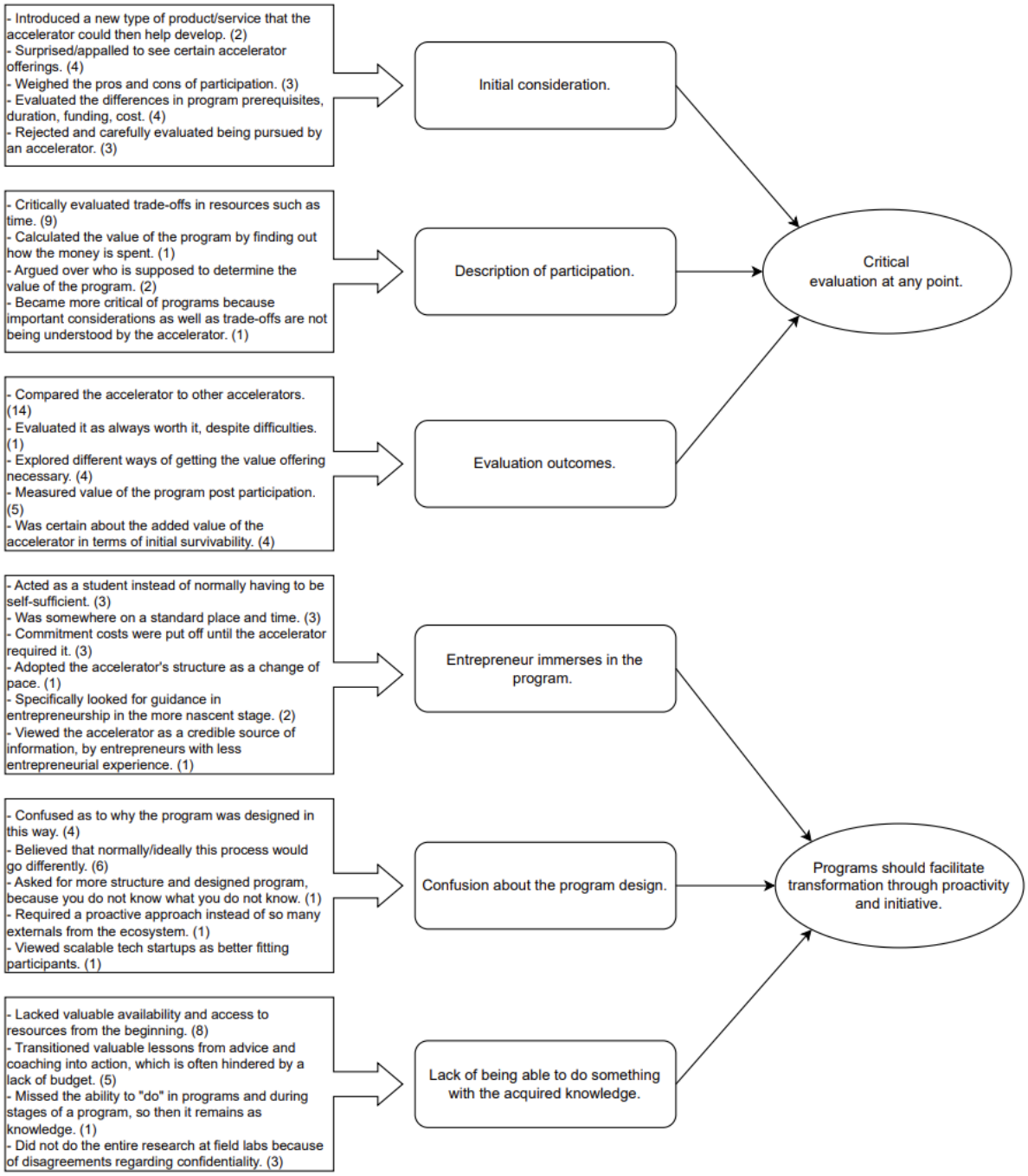
Appendix I – Coding tree





Appendix II – Link to transcripts

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Appendix III – Journal entries

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