




# Opening the Aperture: Explaining the Complementary Roles of Advice and Testing When Forming Entrepreneurial Strategy

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**Abstract.** Forming entrepreneurial strategy is difficult, as the future value of strategy alternatives is uncertain. To create and capture value, firms are advised to consider and test multiple alternative strategy elements. Yet, how firms generate and test alternatives remains understudied. As entrepreneurial firms lack resources for broad search, they often draw upon advisory resources from outside the firm. However, advice can be difficult to extract, absorb, and apply. Although scholars have examined static attributes of the entrepreneur or advisor to explain whether advice is used, a dynamic explanation of how advice is produced and informs strategy testing and formation is missing. In an 11-month field study, we observed 25 founders of 12 food and agriculture firms interacting with a common pool of 34 advisors in an entrepreneurship training program. Leveraging the program's structured design, we observed 165 advice interactions over three phases. No firm took advice and applied it directly to firm strategy. When entrepreneurs engaged literally with advice, they later discounted it—distancing advice from strategy. In contrast, entrepreneurs that coproduced advice challenged advisors to craft novel advice relevant to their strategy, translated it to make it actionable, and tested it—integrating advice into strategy. Firms that distanced advice from strategy did not test strategy alternatives, whereas firms that integrated advice into strategy tested multiple alternatives, explored broader markets, and adapted their strategies. We contribute a grounded process model that explains how coproducing advice opens firms' apertures to consider strategy alternatives, whereas testing informs the strategy elements chosen.

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Forming entrepreneurial strategy is difficult because it involves interconnected elements (Porter 1996, Siggelkow 2002, Ott and Eisenhardt 2020, Peterson and Wu 2021), each with unknown future potential (Gans et al. 2019). Thus, to form entrepreneurial strategy—the unique set of activities that firms use to create and capture value (Porter 1996, Ott et al. 2017)—entrepreneurial firms need to both generate strategy alternatives (Gruber et al. 2008, 2013) and test them to assess their potential value (Agrawal et al. 2021). By testing strategy alternatives, entrepreneurial firms gain feedback on more than one option at an early stage where adaptation is possible in advance of large-scale commitment (Gans et al. 2019). However, little research has examined how firms generate alternatives to test, although the tests

conducted can have long-term ramifications for firm strategy (Felin et al. 2020). A growing number of institutions curate advisors, who have cultivated judgement from experience, to help entrepreneurial firms consider a broader range of options when forming their strategies (Cohen et al. 2019a, Hallen et al. 2020). Theoretically, advice could inform strategy testing (Agrawal et al. 2021), but this has not been empirically explored. External advice is one critical, but perhaps underappreciated, input to how entrepreneurs consider, test, and form their strategies.

External advice can help firms access novel information (Bacon-Gerasymenko and Eggers 2019, Ma et al. 2020), which can increase the requisite variety needed to explore new combinations (e.g., Fleming 2001) or trigger

search to identify strategic alternatives not otherwise available within firm boundaries (Kogut and Zander 1992, Laursen and Salter 2006, Leiponen and Helfat 2011). By advice, we mean information provided by any party outside the firm drawn from their knowledge or experience intended to inform firm decisions (Vissa and Chacar 2009, Chatterji et al. 2019, Lim et al. 2020). External advice is particularly valuable to entrepreneurial firms because of their limited size, organizational knowledge, and capabilities (Stinchcombe 1965, Ruef et al. 2004, Posen and Chen 2013, Cohen et al. 2019a). These firms have neither a rich history of customer and supplier networks nor the external search capabilities of mature firms (Hallen 2008, Katila et al. 2008, Dahlander et al. 2016). Thus, entrepreneurial firms stand to benefit from external advisors who can illuminate potential flaws in intended strategies or reveal new strategy alternatives.

Although external advice has the potential to inject nuggets of new information that enhance the value or viability of a young firm's initial strategy, this potential is not always appreciated or embraced (e.g., Parker 2006). Entrepreneurial firms often have small, homogeneous founding teams (Ruef et al. 2004), which limits their ability to solicit, process, and interpret ideas from external sources (e.g., Gruber et al. 2008, 2013). Entrepreneurs' openness, identity, or adherence to an initial vision can affect their receptivity to advice (Harrison and Dossinger 2017, Ciuchta et al. 2018, Grimes 2018, Hasan and Koning 2019b). Put simply, entrepreneurs do not always apply the advice available to their firms.

Research has suggested that other conditions may influence the likelihood of advice being transferred and applied. For example, proximity to more experienced peers is likely to foster entrepreneurial firm outcomes like revenue and survival (Chatterji et al. 2019, Hasan and Koning 2019a). Access to high-quality mentors can improve managerial knowledge, revenue, and profitable growth (Assenova 2020). Finally, entrepreneurs' social skills can influence the amount of advice created (Dimitriadis and Koning 2022). Although this research suggests that external advice has the potential to enhance entrepreneurial outcomes, the transfer of advice is often assumed without being directly observed. The interactive process by which advice is produced and flows from an advisor to a firm to inform entrepreneurial strategy is often private and, thus, rarely examined.

How does the social process of giving and receiving advice inform entrepreneurial strategy? Often, advice is examined like a contagion model—exposure to proximate, knowledgeable others, followed by diffusion—without unpacking the interactive social process that produces advice and without exploring how firms use advice to inform subsequent strategic action. Yet, mere collocation of “a help-seeker and a help-giver in one physical place” is insufficient to inform firm strategy (Seidel et al. 2016, p. 305). We theorize that advice rarely

comes in the form of a single prescription, but, rather, is the product of social interaction, much like help and feedback (e.g., Hargadon and Bechky 2006, Grodal et al. 2015, Harrison and Rouse 2015, and Feldman and Kahn 2019), and thus needs to be studied as such. Prior to offering advice, advisors typically ask questions to learn more about the firm (Kanze et al. 2018). For example, Techstars' famed mentor manifesto urges advisors to “be Socratic.”<sup>1</sup> Without inquiry, it is difficult to imagine how an external advisor can appreciate the interdependent complexities of entrepreneurial strategy (Siggelkow 2002, Ott et al. 2017, Gans et al. 2019) to formulate advice relevant to the firm. Unpacking how advice is produced and incorporated into entrepreneurial strategy is important, but difficult, as it requires data and analyses at multiple levels (e.g., Kim et al. 2016). What is needed is examination of both the microlevel interactive processes (e.g., Goffman 1981) that underlie how advice is produced, interpreted, and applied (or ignored), followed by examination of how firms make sense of advice to inform entrepreneurial strategy. Both processes are understudied (Bennett and Chatterji 2023).

To address this gap, we studied an entrepreneurial training program (Equity) in the food and agriculture industry, where 25 entrepreneurial founders from 12 firms interacted with a common pool of 34 advisors. We tracked all 12 firms for two months before the three-month program started and for six months after, culminating in an 11-month field study. Equity's structured program included three advice phases interspersed by two intervals where firms could “take action” on their strategies (see Online Appendix A). This unique setting enabled us to observe 165 in-person advice interactions (defined as conversations between advisors and advisees) and trace how advice informed subsequent entrepreneurial strategy. All firms received advice to explore alternative strategy elements, and all conducted strategy tests. Counterintuitively, entrepreneurs who politely answered advisors' questions and acknowledged advice later discounted the advice offered without integrating it into their strategy tests—*distancing advice from firm strategy*.

In contrast, entrepreneurs who challenged advisors to coproduce advice relevant to firm strategy later translated advice to make it actionable. These firms tested a broader range of new strategy elements and adapted strategy—*integrating advice into firm strategy*. Our grounded process model explains that how entrepreneurs engage with a common pool of advisors has consequences for strategy formation. Rather than a nugget of information that is easily transmitted, we show how advice is the product of social interaction and find that to be usable, advice needs to be transformed. Entrepreneurs can exert agency by coproducing advice that is both novel and relevant for the firm. In doing so, we reveal the complementary roles of advice and testing in forming

entrepreneurial strategy. Whereas the coproduction of advice generates strategic alternatives for exploration, testing alternatives informs the strategy elements chosen. In tandem, advice and testing can open entrepreneurial firms' aperture to inspire broader exploration of strategy alternatives.

## Forming Entrepreneurial Strategy

Entrepreneurial strategy—the interdependent elements an entrepreneurial firm uses to create and capture value (Porter 1996, Siggelkow 2002, Ott and Eisenhardt 2020)—is complex, involving multiple interconnected elements, each with unknown future potential (Gans et al. 2019). The elements critical to entrepreneurial strategy include market segments, products, and the resources needed to execute a strategy (Clough et al. 2019). When forming their strategies, firms explore alternative elements and select from among them in either a deliberate or emergent fashion (Mintzberg and Waters 1985). For example, Kirtley and O'Mahony (2020) showed how entrepreneurial strategy was formed not with one decision, but with a series of exits and additions triggered by both problems and external opportunities. More broadly, firms can form their strategies by thinking about strategy—engaging in cognitive processes that emphasize understanding to craft a holistic strategy—and by doing strategy—engaging in experiential processes that emphasize learning from the market (Ott et al. 2017, Ott and Eisenhardt 2020). On the thinking side, firms draw from mental models and analogies to organize the relationships amongst strategy elements and craft a coherent strategy (e.g., Gavetti et al. 2005). On the doing side, firms form their strategies over time through trial and error, bricolage, improvisation, and experimentation (e.g., Brown and Eisenhardt 1997).

Experimentation or strategy testing is increasingly used by firms adopting the Lean Startup method (Contigiani and Levinthal 2019) and is taught in many entrepreneurial training programs, accelerators, and incubators (Felin et al. 2020). Testing helps firms evaluate the viability of alternative strategic elements and converge on a strategy (Murray and Tripsas 2004, Leatherbee and Katila 2020, McDonald and Eisenhardt 2020). For example, high-technology startups that adopted A/B testing practices developed more new products, identified and scaled promising ideas, and failed faster, rapidly dropping nonvaluable strategies (Koning et al. 2022). In practice, strategy testing can take a variety of forms—from scientifically based formal approaches to quasi-scientific and less formal “get out of the building” low-cost market probes (Ries 2011). Regardless of the formality of hypotheses, testing has the potential to add new data to inform the strategies selected. However, testing is not a panacea, as it can be costly (Gans et al. 2019) and, even when conducted, does not necessarily generate new alternatives (Agrawal et al. 2021, Koning

et al. 2022). For example, although A/B tests can be valuable, customers can only react to the specific probes offered, neglecting the broader landscape of possibilities (Felin et al. 2020). Although research has examined entrepreneurial firms' propensity to test their strategies and assessed the effect of testing on firm outcomes (e.g., Camuffo et al. 2020, Leatherbee and Katila 2020, and McDonald and Eisenhardt 2020), less research examines how entrepreneurs generate alternative strategy elements to test. This is a critical gap. Entrepreneurial firms are limited in size, knowledge, and capabilities (Stinchcombe 1965, Ruef et al. 2004, Posen and Chen 2013, Cohen et al. 2019a) and restricted by founders' prior experiences (Shane 2000, Parker 2006, Gruber et al. 2008, Fern et al. 2012, Gruber et al. 2013, Katila et al. 2017, Furr 2019). This can constrain entrepreneurial firms' ability to generate novel strategy alternatives.

A broader understanding of the antecedents to strategy testing is needed. External knowledge sources can help generate novel strategy alternatives (Cohen et al. 2019a, Hallen et al. 2020). Institutions that convene entrepreneurial ecosystems, replete with advisors and mentors, may provide advice on what entrepreneurial firms should test (Agrawal et al. 2021). External knowledgeable parties, such as board members (Vissa and Chacar 2009, Garg and Eisenhardt 2017) and investors (Bacon-Gerasymenko and Eggers 2019), often provide advice. Peers also offer advice (Chatterji et al. 2019, Hasan and Koning 2019a, b). For example, Dimitriadis and Koning (2022) found that entrepreneurs in Togo, trained in social skills, gleaned more from advice interactions with peers than a control group—with positive effects on firm profits. Advice has been defined as an “opinion, recommendation, or guidance about a specific situation” (Schaerer et al. 2018, p. 749). It can provide novel information that highlights flaws in firm strategies, identify strategic alternatives, or help firms decide among alternatives. Advice could thus help firms assess which strategy elements to test, but little empirical research connects upstream, advisory, or consultative resources (Cohen et al. 2019a) with the downstream strategies entrepreneurs test and form.

To provide value, advice needs to offer information that differs from what firms already know (e.g., Granovetter 1973, 1985, Kogut and Zander 1992, Ahuja 2000). However, when advice deviates from a firm's existing knowledge base, it can be unfamiliar and difficult to understand (Allen 1977), absorb (Cohen and Levinthal 1990), or apply (Carlile 2004), as its meaning or relevance to the firm may not be immediately apparent. Advice that differs from an entrepreneurial firm's planned strategies can challenge founders' prior knowledge, experiences, or cognitive structures (e.g., Shane 2000, Gruber et al. 2008, Fern et al. 2012, and Gruber et al. 2013). Thus, even those firms seeking advice may, upon receipt, react with a “not invented here” response that

dismisses the potential value of external information (e.g., Allen 1977, Lifshitz-Assaf 2018, and Waisberg and Nelson 2018). Entrepreneurs who seek autonomy (Rindova et al. 2009, Seidel et al. 2016) or maintain specific founder identities may be less receptive to external advice (Zuzul and Tripsas 2020). For example, Grimes (2018) found that founders with visionary identities hewed closely to their planned strategies, whereas founders with scientific identities experimented with their firm strategies. Finally, not all advice should necessarily be absorbed and applied (Bryan et al. 2017, Cohen et al. 2019a), as outsiders may not fully understand the complexities of firm strategy, and the advice offered may be less relevant. This complicates the notion that: (1) Advice is high quality; or (2) if high-quality advice is available, firms will access and apply it.

How advice is produced and used has historically been difficult to observe, as advice is often the product of a complex, often private, social interaction between a giver and receiver of information (for reviews of CEO advice interactions, see Ma et al. 2020 and Lim et al. 2020). Scholars have traditionally utilized field experiments (Chatterji et al. 2019, Hasan and Koning 2019a, b, Koning et al. 2022), surveys (Gruber et al. 2008, 2013), matched sample designs (e.g., Assenova 2020), or interviews after advice interactions take place. These studies tend to rely on a key assumption: that advice is embodied in discrete nuggets of knowledge that smoothly transfer from advisors to recipients. This research brings us closer to understanding the conditions that facilitate productive exchange between advisors and advisees, but how advice is produced and used to inform entrepreneurial strategy remains unclear.

Without direct observation of advice interactions in situ, it can be difficult to distinguish how advice is created and whether it is relevant to the firm. The social, interactive process by which advice givers and receivers make external advice meaningful and translate it into firm action (e.g., Carlile 2004) is underexamined. Research on help and feedback among creative and technical experts offers some insight (e.g., Hargadon and Bechky 2006). Help seekers and help givers often “tango” during helping encounters to create shared problem spaces where critical feedback can be provided without compromising a creator’s identity (Grodal et al. 2015, Harrison and Rouse 2015). Both feedback and help are typically directed retrospectively toward drafts or finished work, whereas advice tends to be prospective, aimed at informing future decisions (Lim et al. 2020). For example, Bacon-Gerasymenko and Eggers (2019) define feedback as what investors learn from the past performance of portfolio companies, whereas advice informs forward-looking strategy decisions. The problem with advice is that it aims to inform an uncertain future and derives from an external source that may not fully understand the complexities of a firm’s entrepreneurial strategy.

Understanding how advice influences the formation of entrepreneurial strategy necessitates an examination of the social process by which advice is given and received, as well as the firm-level process where entrepreneurial strategy is tested and formed. To address this gap, a research design would need to trace advice interactions and how novel alternatives are sourced and inform strategy formation. Our interaction-based approach empirically links upstream, external advice interactions as a possible input to the strategy alternatives considered, with the downstream strategy testing and adaptation activities that form entrepreneurial strategy.

## Methods

Inductive, qualitative research is appropriate when there are gaps in existing theory (Edmondson and McManus 2007) as to how processes unfold over time (Langley 1999, Langley et al. 2013), especially in emerging contexts (O'Mahony and Cohen 2022). Using a grounded-theory approach (Glaser and Strauss 1967, Locke 2002, 2011), we observed how entrepreneurs interacted with advisors and then whether and how entrepreneurial firms incorporated advice into entrepreneurial strategy. Although these stages are normally difficult to observe (Aldrich and Ruef 2018), entrepreneurial training programs provide an ideal setting (Cohen et al. 2019a, Hallen et al. 2020), as they provide direct access to advice interactions, as well as to subsequent strategy tests or adaptations made when forming entrepreneurial strategy.

## Research Setting

We chose the Equity entrepreneurial training program, as it met our criterion for theoretical sampling in four ways (Patton 2002). First, it is an industry-specific program focused on food and agriculture, which eliminates industry variation. Second, Equity selected firms using a common competitive process. Over 100 firms applied to Equity and were evaluated by using the same four criteria: (1) a product with potential to “build a better food and agriculture system”; (2) the potential to reach a \$1 billion market; (3) founder receptivity to advice;<sup>2</sup> and (4) venture commitment to raising capital. Twelve firms were selected, and all matriculated into the program, permitting a cross-case comparative design (Eisenhardt and Graebner 2007). As shown in Table 1, all 12 were founded between 2011 and 2017 and were at a similar stage, with under 10 employees and three or fewer founders. Investment funds raised ranged from \$75,000 to \$4.5 million.

Third, entrepreneurs from all firms interacted with a common pool of 34 advisors. Advisors were curated by Equity based on their strategic fit with the food and agriculture industry and based on recommendations from program alumni. All 12 entrepreneurial firms participated in the same number of advice sessions during the

**Table 1.** Firm Sample Descriptions Upon Entry to Equity

Subsector	Firm	Date founded	# Entrepreneurs	# FTEs	Funds raised to date (\$000)	State	Initial strategy
Agritech (biotech applied to food and agriculture sectors)	Clean Water	2011	2	9	2,200	ME	Manufactures a high-purity ceramic filter for industrial wastewater. Sells to channel partners/system integrators (water infrastructure companies).
	Pathogen Control	2013	2	6	1,275	OH	Provides food biosensor technology that detects pathogens in food in 90 minutes or less. Sells a Listeria test—in tabletop and handheld form to food producers.
	Agri Lignin	2016	2	2	225	TA	Developed a natural degradable and compostable plastics made from lignin, a waste product. Planning to sell mulch films to fruit framers.
	Coatings	2016	2	2	200	MA	Developed silk-based food coating for fruits and vegetables to prolong/extend the shelf life of perishable foods. Planning to sell coating to producers/growers of produce.
Consumer Packaged Goods (CPG)	Local Frozen	2014	3	5	1,250	NC	Developed local shelf-stable products with a network of farmers, processors, and distributors. Sells frozen fruit to grocery stores.
	Direct Coffee	2013	3	6	750	NY	Provides specialty coffee, roasted in growing areas. Sells three coffee products from two countries directly to consumers and to a few corporate offices.
Farm Labor	Piglet Monitor	2015	3	5	2,550	IA	Developed a patented acoustic design unit to assess piglet squeals to prevent deaths. Sells to pig farmers in United States.
	Farm Robot	2017	1	2	75	PA	Developed a small robotic following cart with the intention to add functionality over time and solve the labor problem faced by outdoor farmers. Sells to berry farms.
Food Waste Management (FWM)	Fiber Snacks	2015	2	2	0	CA	Produced three whole-food snack lines for customers that wanted fruit and vegetable products. Sells to customers of juiceries in City.
	Waste Not	2017	1	1	0	GA	Provides a waste-management platform and service—an end-to-end solution for businesses seeking to earn money from their edible food waste. Sells to food retailers in City.
Precision Agriculture	Energy Data	2014	2	8	4,500	CA	Developed an energy-water management platform with IoT technology, with customer support and engineering services. Sells to outdoor farmers in the California Ag-Energy market.
Supply Chain Management	Acre Data	2015	2	3	0	CA	Provides a cloud-based platform to consolidate food production data and produce data-driven services. Sells to two aggregators (a large food producer network and fertilizer company).

*Note.* FTEs, full-time employees.

three-month program, and all 34 advisors provided advice to two or more firms on topics most closely aligned with their expertise. Fourth, each entrepreneurial firm participated in three advice phases, followed by time to take action on their strategies, which permitted repeated observation of advice interactions and subsequent strategic actions over time. As shown in Online Appendix A, Equity's structured curriculum delineated three-week-long in-person advice phases interspersed with two-month-long off-site action phases when entrepreneurs were instructed to "make progress" on their firm strategies.

In sum, as a research setting, the Equity program offered important methodological advantages. It removed variation in entrepreneurial firms' access to advisors, as well as industry variation. It permitted repeated observations of the same advisor interacting with multiple entrepreneurs and the same entrepreneur interacting with multiple advisors. It also provided direct observation of advice interactions, followed by an opportunity to observe how entrepreneurs responded to that advice over repeated cycles. Together, this provides common conditions in which to assess entrepreneurial firms, minimizing the complexity in conducting cross-case comparisons (Bechky and O'Mahony 2015).

### Field Data Collection

We collected three types of primary field data: (1) observations of in-person advice interactions; (2) off-site interviews exploring whether and how advice informed

entrepreneurial strategy; and (3) firm data collected by Equity. We triangulated across these three data sources (Yin 2009), as shown in Table 2.

**Observations.** Unlike other settings, where advice interactions are private, at Equity, the majority of advice interactions took place in a common, open space, making them observable by the entire cohort and to the researcher. The first author observed all 108 hours of the Equity program encompassing all three advice phases and formalized notes at the earliest opportunity (Emerson et al. 2011).

**Interviews.** In between advice phases, we conducted three waves of interviews with entrepreneurs from all 12 entrepreneurial firms (for a total of 36 interviews). Online Appendix B presents the interview protocol, which queried how firms interpreted advice and whether they incorporated advice into their strategies. We also conducted 17 semistructured interviews with Equity program staff to understand the program design and how the cohort was progressing, for a total of 51 interviews.

**Firm Data.** Finally, we collected firm data from Equity, including each firm's program application, three-minute pitches, stakeholder briefing documents, and briefing books prepared for investors.

**Table 2.** Field Data Collected for Full Equity Cohort: 2018

Firm (N = 12)	Advice Interactions	Feb-Mar Selection Firm data	Apr Advice 1 Observation & firm data	May-Jun Action 1 Interviews	Late Jun Advice 2 Observation & firm data	Jul Action 2 Interviews	Late Jul Advice 3 Observation & firm data	Aug-Dec Post Program Interviews	Sum of Interviews
Acre Data	15	✓	✓	1	✓	2	✓	2	5
Agri Lignin	13	✓	✓	1	✓	2	✓	1	4
Clean Water	13	✓	✓	1	✓	2	✓		3
Coatings	13	✓	✓	1	✓	1	✓	1	3
Direct Coffee	15	✓	✓	1	✓	2	✓		3
Energy Data	14	✓	✓	1	✓	1	✓		2
Farm Robot	17	✓	✓	1	✓	1	✓	1	3
Fiber Snacks	14	✓	✓	2	✓	2	✓	2	6
Local Frozen	14	✓	✓	1	✓	1	✓		2
Pathogen Control	14	✓	✓	1	✓	1	✓		2
Piglet Monitor	14	✓	✓	1	✓	1	✓	1	3
Waste Not	12	✓	✓	1	✓		✓		1
Equity staff interviews		2	2		2		5	6	17
Total data	N = 165		39 hours	13	33.25 hours	16	37 hours	8	N = 51 Sum of Observation N = 106.25 hours

*Notes.* Firm data: application forms, updated three-minute pitches presented at every workshop, briefing books for investors, etc. Observation: the first author observed all founders during advice interactions with program staff, other entrepreneurs, and mentors. Interviews: the first author interviewed the CEO of all firms except for Piglet Monitor, where only the COO attended and was interviewed.

## Analytic Approach

Data analysis encompassed four phases: (1) coding advice interactions; (2) coding how entrepreneurs interpreted advice; (3) coding firms' strategy testing; and (4) inducting a grounded process model linking advice interactions to strategic actions over time. To build grounded theory, we compared and contrasted how the 12 firms engaged with advice and checked the robustness of emergent theory as we progressed (Glaser and Strauss 1967, Strauss and Corbin 1990).

**Coding Advice Interactions.** First, we coded microlevel interactions from direct observations made during the three face-to-face advice phases. We defined an advice interaction as comprising least two moves (e.g., Pentland 1992 and Pentland and Rueter 1994)—words exchanged between an entrepreneur and an advisor. We coded 165 advice interactions. We open coded (Charmaz 2006) all moves used by both entrepreneurs and advisors. Then, we grouped similar moves into eight types, as shown in Table 3.

Advisors predominantly used four moves: probing, offering advice, assisting, and revisiting. (1) We coded a move as *probing* when an advisor asked basic questions about a firm's strategy. For example, an advisor asked an entrepreneur: "What's your next hire?" (2) We coded a move as *offering advice* when advisors either proactively made a suggestion to improve firm strategy or provided help, without being asked to do so. For example, one advisor suggested that an entrepreneur sell via a new market channel (a labor group): "You want to go to the unionized group. You're providing something that improves working conditions." (3) We coded a move as *assisting* when advisors responded to a specific question from an entrepreneur. For example, after an entrepreneur requested an advisor's opinion on how investors perceived grants, the advisor assisted by sharing his opinion: "Always positive." After our initial coding, we placed advisors' moves into temporal succession within an interaction. In doing so, we realized that, in some interactions, advisors modified their initial advice during an interaction. Thus, we coded a fourth move used by advisors: *revisiting* their initial advice to make advice relevant to the firm's strategy.

Entrepreneurs primarily used four moves during advice interactions: (1) acknowledging, (2) answering, (3) elaborating, and (4) seeking. (1) We coded a move as *acknowledging* when entrepreneurs responded to the advice proffered often by politely thanking the advisor. For example, after receiving advice to sell to a unionized labor group, Clint the CEO of Farm Robot acknowledged the advice by saying: "We need to do that for sure." (2) We coded a move as *answering* when entrepreneurs addressed advisors' questions directly. For example, when Daniel from Acre Data was asked about his next hire, he answered: "Someone that will lead the

contract development." (3) We coded a move as *elaborating* when entrepreneurs not only answered an advisor's question, but explained the context of their firm's strategy—how different strategy elements interconnect. For example, when Paul from Local Frozen was asked about his next hire, he elaborated: "We're evaluating what level we want to hire ... It depends how we're scaling our products. If we do dry, we need e-commerce, if [we do] frozen vegetable, we don't." (4) We coded a move as *seeking* when entrepreneurs requested advice on a specific problem of importance to the firm's strategy. For example, Richard, the CEO of Direct Coffee, sought advice about scaling: "We have a deal in the pipeline now with a health company that manages a program for [large gym network], and they want to put our coffee in every [gym] ... How quickly can we get to that kind of scale?"

**Coding Interpretation of Advice.** During action phases, firms used four practices to interpret the advice produced: (1) discounting advice, (2) reengaging advisors, (3) reassessing strategy, and (4) forming new hypotheses. When entrepreneurs considered advice as irrelevant to their firm's strategy, we coded this as *discounting advice*. For example, Jennifer, the CEO of Waste Not, received advice to consider franchising in other locations, but decided to maintain her "focus on the local city market." We coded that entrepreneurs *reengaged advisors* when they requested clarification after an interaction. For example, Anna, the COO of Fiber Snacks, reached out to an advisor to clarify her marketing strategy after one interaction: "I spent an hour talking to Bill about SEO [Search Engine Optimization]." When entrepreneurs considered the implications of advice for their firm's strategy, we coded this as *reassessing strategy*. For example, Courtney, the CEO of Fiber Snacks, explained: "I've already seen so many things transform within our own mindset about how we're approaching the business ... we know how to connect to our consumer ... But when we're pitching to a different age demographic, a different background, it's more ... [about] measurable, quantifiable traction." Finally, we coded when entrepreneurs *formed new hypotheses*: whether they articulated any "unique theories or models about how to create value" (Felin et al. 2020, p. 1) or novel propositions that were testable. Although some hypotheses were posed formally following the logico-deductive model, others were posed as questions to be explored (e.g., Graebner et al. 2023). For example, initially, Fiber Snacks planned to sell fruit and vegetable snack food products to "moms" seeking environmentally friendly, healthy snacks for their children. After Anna, the COO, received advice to consider a broader market, she formed a new hypothesis: "If consumers are looking for ... fruit and vegetable-based products ... they will be attracted to our ingredients and buy our product." We grouped

**Table 3.** Advisor and Entrepreneur Moves in Advice Interactions

Moves	Illustrative data	Code (# interactions)	Definition
Advisor moves	<i>“At what point does product development lag behind the rest of the company?”</i>	Probing (165)	Asking questions often to better understand a venture, product, or market
	<i>“Some industry connection would help you guys so much. Someone that knows the players... You want someone who smokes cigars and talks the talk.”</i>	Offering (23)	Offering help or advice without being asked—often a prescription of what the firm should do
	The advisor changed her original advice to <i>“show your investors that your customers want that [your product]”</i> after the entrepreneur explained their priority to focus on proving the science with pilot manufacturing customers: <i>“You need to acknowledge it as an issue for the next round [of funding] though.”</i>	Revisiting (21)	Adjusting initial advice to offer different recommendations for the venture, to fit their context
	After entrepreneur asked for advice on how to grow: <i>“I would stick with your current retailers. We would continue to keep our existing retailers happy and think about it as a slotted approach. Service your existing customers ... They need to be good proof points.”</i>	Assisting (25)	Offering opinion/judgment/suggestions or coaching at the request of the venture
Entrepreneur moves	After entrepreneur asked for help on what their target market is, given their advertising budget: <i>“I think the target number is the whole thing, not who you can reach.”</i>		
	After receiving advice on potential problems with the team: <i>“That’s fair. We’re looking at it ... Having someone like that on the core team is the focus.”</i> – Fiber Snacks	Acknowledging (23)	Agreeing or thanking the advisor
	After receiving a question on team needs to conduct a pilot: <i>“I need a fresh MBA that will deal with the relationships.”</i> – Coatings	Answering (91)	Answering a question precisely
	After receiving a question on their product’s size: <i>“10 by 5 or something, so it’s pretty compact. We’re already a 40% smaller footprint than many of our competitors”</i> – Clean Water	Elaborating (94)	Answering a question or responding to advice with an explanation of how strategy elements fit together (adding context, logic, or constraints)
	After hearing concerns about the crowded coffee market: <i>“The data on the consumer side is showing our value prop. A very good critique is that we need to talk better about the consumer.”</i> – Direct Coffee		
<i>“I could use you guys’ help in shaping the value proposition.”</i> – Acre Data	Seeking (20)	Asking for advice on a specific question or strategy element, of importance to the firm	
	<i>“Do you have thoughts and suggestions on finding a great [investment] lead?”</i> – Farm Robot		

Notes. Moves in italics are by advisors. All other moves are by entrepreneurs in focal firms. All interactions are face-to-face. Count: the number of advice interactions in which an entrepreneur or advisor used this move multiple times.

these three practices: reengaging advisors, reassessing strategy, and forming new hypotheses as *translating* practices (e.g., Carlile 2004), as they were core to entrepreneurs’ efforts to interpret how advice could inform firm strategy and frequently performed together.

**Coding Strategy Testing and Adaptation.** All firms conducted strategy tests, which typically involved trials or probes to test the viability of elements that comprised their strategy. We considered a strategy test to have occurred when any one of three strategy elements—*product*, *market*, and/or a specific *resource*—were tested (Sorenson et al. 2006, Clough et al. 2019). We identified 26 strategy tests (mean = 2 per firm). This aligns with prior work, given the stage of firms and the time frame

of study (e.g., Camuffo et al. 2020). We coded whether tests reflected *new strategy elements* or *initial strategy elements*, as articulated in firms’ program application. Finally, consistent with Kirtley and O’Mahony (2020), we compared the strategies that firms presented in each advice phase and assessed them for changes in strategy elements. We coded a firm as *maintaining* its strategy if the strategy continued with the same products, markets, and resources as shared previously. For example, Pathogen Control’s initial strategy was to sell “breakthrough, solid state biosensor technology for food safety” that tested for Listeria and was sold to indoor growers. These strategy elements remained consistent throughout the program. We coded a firm as *adapting* its strategy if firms added or reprioritized a new product, market,



or resource. For example, Agri Lignin adapted its strategy to add new markets and products not envisaged in its initial strategy: “[now] we’re just making a plastic resin [from lignin] and then selling that to a manufacturer [rather than selling mulch films to farmers, as originally envisioned].”

**Inducting a Grounded Process Model.** We compared patterns within firms, across firms, and over the three advice cycles. We reexamined each of the 165 advice interactions and aggregated the moves made by multiple entrepreneurs within a firm, moving our analysis from individual behaviors to collective firm-level actions. Following Grodal et al. (2015), we sequenced and mapped the four types of moves used by advisors and the four types of moves used by entrepreneurs. By analyzing these data in matrices, we noticed two distinct patterns. In one pattern, advisors *offered advice* and *probed*, and entrepreneurs primarily *acknowledged* or *answered* advisors’ questions. We coded these interactions as *engaging with advice literally*, as advice was taken at face value. In another pattern, entrepreneurs used additional moves to *elaborate* or *seek* additional advice to proactively steer advisors toward issues relevant to their firm. In these interactions, advisors *revisited* their initial advice, which often differed from the advice initially offered, or *assisted* with specific advice to address entrepreneurs’ questions. We coded these interactions as *coproducing advice*, as entrepreneurs guided advisors to create advice relevant to the firm.

We next used temporal bracketing (Langley 1999) and placed all data from advice phases and action phases in temporal order for each firm. We developed tables that compared advice interactions, interpretation practices, and strategy tests for all 12 firms. We did not assess the quality of advice provided, but focused on how advice was produced and interpreted and whether advice informed subsequent strategy tests or adaptations. In doing so, we noticed that four firms (Farm Robot, Pathogen Control, Waste Not, and Acre Data) did not integrate advice into strategy testing and distanced advice from strategy, whereas another set of six firms (Agri Lignin, Coatings, Energy Data, Direct Coffee, Fiber Snacks, and Clean Water) integrated advice when testing and forming their strategies.

To explain this variation, we created a series of figures and models that visualized our data across advice interactions, interpretation practices, and strategy testing (Langley and Ravasi, 2019). In line with the tenets of grounded theory (Glaser and Strauss 1967, Locke 2002), we created 19 different figures, iterating and constantly comparing across data and models to achieve parsimony. We reexamined our data on two firms (Local Frozen and Piglet Monitor) that did not consistently fit either pattern and observed that both firms transitioned from a distancing to an integrating process in the second

phase. Further temporal analysis revealed that once these firms began coproducing advice, they tested new strategy elements and integrated advice into strategy. This suggested the importance of advice interactions as a mechanism to launch the integrating process. We then inducted a grounded theoretical model that could explain the process by which entrepreneurial firms integrate advice into entrepreneurial strategy—with attention to the roles of both advice and testing.

## Results

Upon entry to Equity, all 12 entrepreneurial firms had developed innovations with the potential to “drive a better food and agriculture system” (Equity website) and were at a similar stage of development. When firms arrived at Equity, they were exposed to a vetted group of advisors, consisting of a mix of program alumni, potential customers, and partners curated by Equity. In the first advice phase, entrepreneurs were challenged by the Equity curriculum and by advisors to explore whether they were solving the right problem and to focus on identifying and meeting customer needs. They left this first session with a simple charge to make progress. They returned for two more advice phases to explore whether they (a) had the right people and resources and (b) were ready for investment and scale, with time to make progress and conduct strategy tests in between. Our analyses of entrepreneurs’ journeys during and after the program revealed two processes: an integrating process that tested strategy alternatives inspired by advice and a distancing process that discounted advice. These processes started with small differences in interaction patterns that triggered larger differences in how firms tested and adapted their strategies.

### Integrating Process

Six firms (Agri Lignin, Clear Water, Direct Coffee, Energy Data, Coatings,<sup>3</sup> and Fiber Snacks) engaged in an *integrating process* throughout our study. These firms coproduced advice to create relevance for their firms’ strategy and translated advice into hypotheses to make advice actionable. Although all firms tested their strategies, only firms following an integrating process tested new strategy elements (markets, products, or resources) not identified in their original strategies.

**Coproducing Advice.** Advice interactions typically began with entrepreneurs sharing an overview of their firms’ strategies. Advisors then peppered entrepreneurs with probing questions. When addressing these questions, entrepreneurs from firms following an integrating process used elaborating moves to offer more context or rationale on the interconnected components of their firm’s strategies. For example, in the second advice phase, Chuck, the CEO of Energy Data, discussed his

market and organizational growth strategy with advisors. He explained that Energy Data automates farm reporting through an Internet of Things (IoT) platform to help farmers save water. Four advisors asked probing questions, and Chuck elaborated as follows:

*Advisor probing: So what does the product do?*

Entrepreneur (Chuck) elaborating: It is a software platform, pulls in several years of data, and looks for anomalies and inefficiencies to find cost-savings. A lot of growers are on the wrong rate plans... they were automatically paying and didn't think they could do anything about it... A farm gets 100 different meters and 100 different bills per month. We built first-level AI to figure out patterns and trends. We can detect if an equipment failure is going to happen before it happens.

*Advisor probing: How do you do that?*

Entrepreneur (Chuck) elaborating: It's through efficiency rating. If a pump starts to fail, it drains hotter. We track all the details, make it sticky, and have a SAAS service.

*Advisor probing: What type of contracts do you have with these guys?*

Entrepreneur (Chuck) elaborating: It's per meter per month. It's really flexible, and we show the ROI upfront. So far we have 100% renewals... We're looking for an 85% goal.

By *elaborating* on the different elements of Energy Data's strategy (customer, product, and sales), when answering advisor probes, Chuck guided advisors to understand Energy Data's growth strategy more thoroughly. Another advisor *offered* initial advice for how Chuck might show growth potential to investors: "I'd like to see you demonstrate sales outside of California." Chuck *elaborated* further to explain Energy Data's planned strategy for geographical expansion to Texas: "Odewalla, Texas, are interested, but we have customers in California." The interaction proceeded for several minutes with four advisors probing to discover even more about Energy Data's sales strategy. A different advisor *probed*: "Have you got a benchmark [on sales team composition] of where you are today?" Chuck *elaborated*: "We don't have a head of marketing right now. So we're looking to add some headcount in sales and marketing to generate more traction and close more deals." When one advisor *offered* his initial advice that Chuck hire a marketing lead who could also act as a CFO, Chuck *elaborated* that this advice was cost-prohibitive: "This is the thing in the Bay Area [where salaries are very high], do you really need a C-suite level person to do that task?" This advisor further *probed* Chuck about Energy Data's burn rate. Chuck *elaborated* again: "Our timeline is March-April of next year, where sales is fully sustaining the company at current head count."

By *elaborating* on how different elements of his strategy fit together, Chuck invited advisors to revisit their initial advice (to expand outside of California and hire a CFO) and further engage with him to solve Energy Data's most pressing strategy challenge: scaling their ability to sell to customers in the expensive Bay Area labor market. *Revisiting* their initial advice, one advisor backtracked and said: "You'd be better off waiting [to hire a CFO] until you're profitable." Another advisor also *revisited* his previous advice, suggesting that Energy Data decrease "customer-acquisition costs" by focusing on channel partnerships to renew utility contracts. Together, Chuck's *elaborating* moves and advisors' *revisiting* moves enabled entrepreneurs and advisors to coproduce tailored advice relevant to Energy Data's strategy: focusing on partnerships to drive sales to help Energy Data grow at a lower cost than hiring an expensive C-level marketing executive. When *elaborating*, entrepreneurs shared the rationale behind their firm's strategy or explained the ramifications that advice would have for other elements of strategy. This prompted advisors to *revisit* their initial advice and tailor it to the firm to create relevance.

Another firm, Agri Lignin, developed natural degradable and compostable plastics from lignin—a waste product from the paper industry. During the first advice phase, Ted, the CEO, sought advice about which market segments Agri Lignin should target first with its raw lignin-based product. The firm had identified two potential markets: biodegradable mulch films for "Albert the farmer," which it had prioritized, and "pulp and paper trays... [for a] food service packaging company." Ted confessed to advisors that he was not sure whether Agri Lignin had identified the "beachhead market" that would reach profitability quickest: "Agriculture itself might not be the best beachhead market for us. There are other areas with less than a three-year proof point." Then, Ted sought advice, and advisors assisted:

Entrepreneur (Ted) seeking: Herein lies the crux: We haven't got to the point where we can make a product for farmers. Is ag[riculture] the right space?

*Advisor (Aidan) assisting: Have you thought about commercial [garden] nurseries?*

*Advisor (Mary) assisting: That seems to me to be the most compelling... the food contact piece is complicated.*

By *seeking* advice on the two target markets Agri Lignin was considering, Ted invited Aidan and Mary to *assist* with identifying alternative markets. Together, Ted and advisors coproduced advice relevant to Agri Lignin's pressing strategy dilemma: Which initial target market would achieve profitability quickest? In the process, Agri Lignin gained a novel idea for a third potential market—garden nurseries—while surfacing new concerns with the two markets previously identified. When *seeking*, entrepreneurs queried advisors on the

strategy concerns they deemed important, and advisors *assisted* with advice to address entrepreneurs' specific questions. As these two examples show, when entrepreneurs used *seeking* or *elaborating* moves, they propelled coproducing interactions with advisors. *Seeking* moves focused advisors on the firms' most pressing strategy concerns, and *elaborating* moves helped explain how different strategy elements worked together.

Entrepreneurs' use of these coproducing moves guided advisors to revisit their initial, sometimes off-the-cuff, advice or to assist with questions. These moves prompted advisors to generate novel alternatives relevant to firm strategy (see Figure 1). Armed with a deeper understanding, advisors then tailored their advice to create advice that was novel, but also relevant to the firm's strategy. Coproducing interactions unfolded in two sequences. In the first sequence, entrepreneurs, like those from Energy Data, *elaborated* on their firm strategy when advisors *probed* or *offered* advice. In the second sequence, entrepreneurs, like those from Agri Lignin, proactively *sought* advice on strategy priorities. Both sequences guided advisors to surface strategy alternatives that were novel, but relevant to firm strategy.

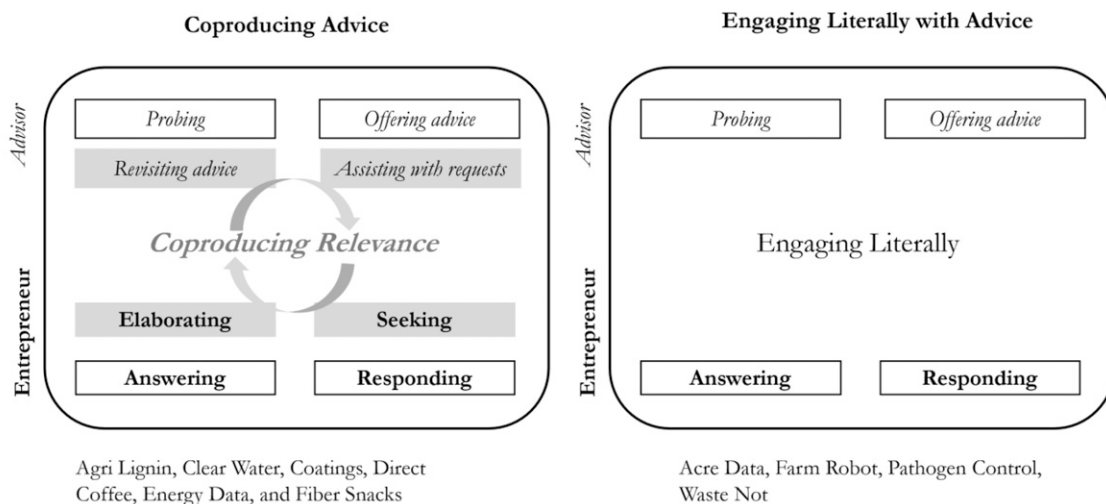
As shown in Table 4, all advisors probed all firms across all three advice phases. All six firms following an integrating process used elaborating moves to explain their firm strategy to advisors, and, in response, advisors revisited their advice. In five of six firms, entrepreneurs sought specific advice, and advisors assisted. For firms following an integrating process, use of coproducing moves increased over time, as indicated by the shading in Table 4. Advisors only used assisting and revisiting moves with integrating firms—when they

were challenged by entrepreneurs to coproduce relevant advice.

**Interpreting Advice.** Although coproducing interactions helped create advice with relevance for firm strategy, we did not observe any firm directly apply this advice, as illustrated in Table 5. Instead, firms used three practices to translate advice into action: 1) *reengaging advisors* to clarify advice, 2) *reassessing strategy*, and 3) *forming new hypotheses*. Agri Lignin's initial strategy was to sell mulch films to farmers as its beachhead market and then sell biodegradable containers to the food industry. Advisors Aidan and Mary had suggested garden nurseries as an alternative market, which would not require the longitudinal data needed to satisfy the farming or food markets.

Agri Lignin entrepreneurs Ted and Justin *reengaged* Aidan by inviting him to dinner. They asked him to clarify his advice recommending the garden nursery market. Together, both parties explored the implications of the advice discussed earlier. After this dinner, Justin and Ted *reassessed Agri Lignin's strategy*. As Justin explained: "We've been trying to reevaluate our business model ... [with] a different product [lignin pellets] ... that would help us get to revenue faster." After *reassessing strategy*, Ted and Justin *formed a new hypothesis*: "We wanted to talk to the people in food service packing to see if they would be interested in using the films [for food storage] and also create pellets to partner with people [manufacturers] to create other products." Although not articulated formally, this implicit hypothesis prompted the team to conduct tests in new markets (garden nurseries). Data from these tests would enable comparison of

**Figure 1.** Advice Interaction Patterns



*Note.* Grey arrows and boxes denote coproducing relevance—where advisors and entrepreneurs created novel advice relevant to firm strategy.

advisors' suggestions with their planned "beachhead" markets.

Similarly, Sarah and Jane, the CEO and Chief Financial Officer of Clean Water, a firm that manufactures molecular filters to simplify wastewater filtration, *translated* advice to make it actionable for their firm. In their initial strategy, Clean Water planned to hire a Vice President of Sales, who would take on the firm's sales efforts. In the first advice phase, several advisors highlighted flaws in Clean Water's go-to-market strategy: "The plan to sell and scale remains unclear." One advisor suggested that the firm prioritize sales to: "a few customers with lots of capacity need. ... I can make introductions [to beverage companies]." After the interaction, Sarah *reengaged with advisors* to make sense of their advice: "[We heard] the team is not dialed in with sales. We agree. ... Right now, we have an offer out for a VP of business development. It's the area we need to grow into next." Advisors told Sarah that delegating sales to a VP was not sufficient, as Clean Water still needed to articulate a sales strategy. One advisor clarified: "My question about scale is the fact that these customers are large, but few. Will you need to scale across the world?" Another advisor added: "Those global partners, are they segmented by market? Is the application horizontal or vertical?"

After reengaging advisors and better understanding their scaling concerns (as to the sales paths possible), Sarah *reassessed Clean Water's strategy*. As she explained in an interview: "Partly because I was hiring a business person, I probably wasn't as focused on that [sales strategy] at that time ... It [the advice] really pushed me to talk to end users ... I had to communicate certain aspects of our business more clearly ... to a broad spectrum of people ... I had to do it [sales] ... myself." After reassessing Clean Water's sales strategy and realizing the shortcomings that advisors identified, Sarah and Jane *formed a new hypothesis* to compare potential target markets: "If food & beverage producers need to conserve/secure water resources, they will adopt reuse strategies that cost them \$0.015/gallon wastewater ... Our hypothesis will be verified if 10 end-users or two engineering firms/system integrators confirm that treatment costs are acceptable." Testing this hypothesis would indicate whether Clean Water should focus on its planned sales channel (systems integrators) or the alternative target markets identified during advice interactions (food and beverage producers).

Integrating firms did not test verbatim the advice coproduced during interactions, but *translated* it—to make it actionable to their firms. All firms that coproduced advice used translation practices to kick off a process that integrated advice into strategy. To translate advice, these firms *reengaged advisors* to better understand the novel alternatives suggested, *reassessed their strategy* to better understand how advice might apply, and *formed new hypotheses* (whether formal or informal)

informed by advice. Integrating firms typically assessed the merits of novel strategy elements inspired by advice and designed tests to compare those alternatives to their planned strategies. Agri Lignin formed a hypothesis to test multiple alternative beachhead markets, as well as test mulch films for farmers as planned. Clean Water formed a hypothesis to test the potential of a new, direct market for its water-filtration product to enable comparison with its planned strategy: selling through systems integrators. These new markets had the potential to speed time to revenue and grow the addressable market for both firms, but their viability was uncertain.

**Conducting Strategy Tests.** Only firms following an integrating process tested new strategy elements. All integrating firms tested a new target market, plus one or two other new strategy elements (products and/or resources). Half tested all three types of elements, as shown in Table 6.

Clean Water interviewed potential customers in a new direct target market (food and beverage), in addition to customers in their planned strategy (system integrators). Jane, the CFO, said: "We talked with 20 [food and beverage] customers, three system integrators/channel partners." Clean Water shared the results of these strategy tests in an updated pitch deck: "There is a market for small micro-breweries. We verified a competitive price for mid-size breweries." An advisor had suggested that Clean Water explore large corporate beverage companies. However, the test confirmed viability of a more precise target market: small and medium breweries.

In the first action phase, Agri Lignin tested multiple new products with varied target markets inspired by advice. Ted said, "To see if we could create pellets and partner with people [manufacturers] to create other products ... we talked to our supply chain, supply manufacturing, and retail." Through testing, Agri Lignin learned that a supplier to garden nurseries—garden pot manufacturers—would pay for simple pellet-based products. This test helped refine advisors' suggestion to target garden nurseries. Justin shared the learning from this test: "We've had this fractured business model ... it just all needs to be that B2B model because making the lignin pellets is way easier than making a full product [e.g., mulch films and cutlery]." This simpler product for garden pot manufacturers could shorten time to revenue, compared with Agri Lignin's planned strategy. Advice helped Agri Lignin identify a possible market to explore (garden nurseries), but the test validated more precisely where a viable market existed: garden pot manufacturers. By translating and testing advice, integrating firms could compare new strategy elements with those planned, thus converting strategy alternatives into viable options. Advice opened up firms' aperture to consider broader market possibilities, and strategy tests validated which could be realized.

**Adapting and Iterating Strategy.** After testing, integrating firms had to choose whether to adapt their strategy by incorporating the new strategy elements tested and/or drop planned strategy elements. Entrepreneurs only adapted their firm's strategy when test results validated that the new element could add value to the firm's strategy. When entrepreneurs re-engaged with advisors, they coproduced advice on their adapted firm strategies, fueling further cycles of iteration informed by both advice and testing. To illustrate, we trace Clean Water's strategy adaptations and iterations across three cycles of advice, translation, and testing.

After the first advice and action cycle, Clean Water had tested two indirect sales channels via systems integrators, as well as direct channels with food and beverage manufacturers. Victor, the (newly hired) VP of Clean Water Sales, shared Clean Water's test results: "We talked to microbreweries and found a [new] market, but we're working with channel partners [systems integrators] right now." Based on these results, Clean Water chose to *adapt* two strategy elements: its target market and its product. Clean Water shifted from selling whole filtration systems to system integrators over to selling individual pipes to microbreweries. These strategy adaptations allowed Clean Water to serve the needs of more varied customers and broaden its target market. Advisors suggested alternative markets, and Clean Water validated which alternatives could be realized.

During the second cycle, Victor and Jane presented Clean Water's *adapted* strategy and *sought* advice on what other customers would be interested in this product: "We can also use this [individual pipe product] as a platform, so we use the ceramic filter, but can filter our specific target molecules. We should look for an industry that needs high-purity products, to get into their products." One advisor, Eric, *assisted*: "Maybe pharma." Another advisor, Sid, added, "later on, metal recovery." Eric continued: "Flint, Michigan, and other municipalities." Clean Water translated this advice and tested it to see whether individual pipes could be customized to meet the needs of a third market: pharmaceutical firms. After presenting at varied customer events, Clean Water received the most "inbound interest" from the pharma market. Clean Water adapted its strategy again, to target pharmaceutical firms, in addition to systems integrators, as previously planned. Based on this third round of testing, Clean Water chose to deprioritize the brewery market explored earlier at the suggestion of advisors. In the end, Clean Water adapted two elements, products and markets: from selling whole systems via systems integrators to selling customizable filtration pipes directly to a broader range of customers than planned. By the study's end, NASA approached Clean Water at a pharmaceutical event, broadening Clean Water's potential target market even further.

Agri Lignin also iterated across three advice-action cycles. In the first cycle, Agri Lignin presented a strategy to reuse lignin waste from the paper industry to produce and sell mulch films to farmers. In the second cycle, Agri Lignin shared its *adapted* strategy, informed by both advice and testing: "We sell biodegradable and compostable plastic products to farms and greenhouses [garden pot manufacturers], who rely on plastic products to operate their business." Agri Lignin chose to *adapt* its target market (by adding garden pot manufacturers) and *adapt* its product (simplifying from mulch films to pellets). In the third cycle, Agri Lignin further *adapted* its target market to include paper manufacturers. This *adapted* strategy drew interest from investment firms interested in the "circular economy" and ways to tackle waste and pollution. By the study's end, Agri Lignin and Clean Water adapted their strategies three times: both choosing to sell simpler products to broader markets than initially planned.

After coproducing advice and conducting strategy tests, all six integrating firms chose to adapt and iterate their strategies, broadening the markets they served. Rather than accept advice at face value, all integrating firms expended effort to integrate advice into strategy—through coproducing, translating, and testing. During advice interactions, these entrepreneurs sought advice and elaborated on their firm's strategies in response to advisors' probing inquiries. They guided advisors to revisit their initial, "off-the-cuff" ideas and asked for assistance with their most pressing strategy concerns. Coproducing advice helped open the aperture to consider strategy alternatives that were both novel and relevant. Yet, translation work was still needed to make this advice actionable. Rather than simply test the advice coproduced, firms translated advice by reengaging with advisors, reassessing strategies, and formulating novel hypotheses. All integrating firms tested new markets and either a product and/or resource inspired by advice. These tests often provided the evidence firms needed to decide whether to adapt their strategies and pursue the strategy alternatives inspired by advice. This process reveals the complementary roles of advice and testing in forming entrepreneurial strategy. The coproduction of advice generates possibilities for exploration, whereas testing informs which strategy elements are chosen. When firms shared adapted strategies with advisors in future advice cycles, they changed the underlying content discussed, coproducing substantially new advice on adapted strategies. By repeating the coproduction, translation, testing, and adapting process over additional cycles, integrating firms explored, in total, three different iterations of their strategies: exploring new markets, products, or resources each time. All six integrating firms included broader target markets in their final strategies than in their initial strategies.

## Distancing Process

Four firms (Acre Data, Waste Not, Pathogen Control, and Farm Robot) did not coproduce advice with advisors for the duration of the study. Entrepreneurs in these firms engaged literally in external advice interactions, discounted advice, and did not test new strategy elements.

## Engaging Literally with Advice

Entrepreneurs from firms following a distancing process shared their firms' strategies with the same advisors as firms following an integrating process and faced an equivalent number of probing questions (see Online Appendix C). However, entrepreneurs from these four firms engaged literally during advice interactions and used fewer types of moves than those in coproducing interactions. As shown in Figure 1, these entrepreneurs used two moves: *answering* the questions advisors asked and *acknowledging* the advice offered. Advisors tended to ask *probing* questions to expand their understanding of a firm's strategy or simply *offered* advice. Entrepreneurs engaging in literal advice interactions did not use elaborating or seeking moves, and advisors engaging with these firms did not use revisiting or assisting moves:

When advice was *offered*, these entrepreneurs *acknowledged* the advice politely. For example, Daniel, the CEO of Acre Data, positioned Acre Data as a data company providing insights to food producers. He focused on a single use case: a nitrogen compliance report to help a current customer with sustainability reporting to illustrate his strategy. Two advisors (Chris and Anthony) *offered* ideas for Acre Data's market positioning, and Daniel *acknowledged* each positively:

*Chris, advisor offering: So you're like "Turbo Tax for nitrogen management."*

Daniel, CEO acknowledging: Yes, everyone does sustainability reporting.

*Chris, advisor offering: Nitrogen [compliance] reporting sounds ubiquitous ...*

Daniel, CEO acknowledging: Yep, everyone had to report to some food company and they have to do a sustainability report; we do both.

*Anthony, advisor offering: So this is a "software as a service" where you're selling models?*

Daniel, CEO acknowledging: Yes... we have a working prototype and a model.

After this exchange, Chris asked Daniel one more *probing* question and then *offered* advice: "The data feel like a distraction, it's the compliance that's the pain point." Bill, the COO, *acknowledged*: "That's what we're saying." Without further explanation, Daniel changed the subject and launched into Acre Data's business model and exit strategy, retaining the firm's original positioning: "If we

execute properly, we're a data company, and that gets into either Google, Amazon, or IBM." Advisor Anthony tried to redirect the conversation back to positioning Acre Data as a compliance company and *offered*: "Say the compliance is your product up front and then say that you'll have a data play." Daniel again *acknowledged* advice, but reinforced Acre Data's original market positioning. Later, we learned that Acre Data founders had concerns that positioning the company as a compliance company (rather than a data company) could inhibit the firm's appeal to potential acquirers. But Daniel had *acknowledged* the advice offered without *elaborating* on how this advice conflicted with Acre Data's planned strategy of being a data company. Thus, advisors did not *revisit* their advice to tailor it to create relevance for Acre Data's strategy. After the interaction, Daniel reported that he found the advice produced irrelevant.

In his three-minute pitch, Clint, CEO, shared Farm Robot's strategy and then concisely answered a multitude of questions about his firm's strategy before receiving advice. His firm had developed an autonomous navigation (path-following) robot for farms that grew handpicked fruits. Clint explained how his robot would follow fruit pickers in the field and transport the picked fruit back to the farm's sorting area. Whitney, a potential investor, asked a series of *probing* questions and Clint *answered* each question politely and succinctly.

*Advisor probing: How do you keep track of [the picker]; if I'm picking, how do they know I picked it?*

Entrepreneur Clint answering: [Redacted Name] Farms label each bucket.

*Advisor probing: Are you saving time? Usually another person is doing that?*

Entrepreneur answering: The savings is the walking up and down.

*Advisor probing: You're adding the scanning portion?*

Entrepreneur answering: No.

*Advisor probing: You're only working with people that already have that?*

Entrepreneur answering: A lot of growers have said they have systems in place already to handle that.

This exchange proceeded for several minutes with two other advisors joining Whitney in *probing* Clint to understand the value of the robot. Clint *answered* all questions with precision and patience. At the end of this interaction, Whitney *offered* advice, saying that the cost to develop the robot did not seem worth the value it would produce: "Its [cost is] \$10,000, you're putting a lot of effort in to develop the robot. It's pretty minor [value] in terms of the whole picking." She could not understand how the robot would be worth \$10,000 to farmers if the robot was not actually picking fruit, but only transporting it to a sorting area.

All three advisors offered thematically consistent advice to Clint, suggesting that Farm Robot explore ways to better demonstrate the value of his robot. For example, Rowena *offered*: “I wish you had talked about the labor you’re offsetting. The pain point from a more human or labor perspective.” A third advisor *offered*: “Put in a slide that says you’re saving a farm XX per month.” Clint *answered* each advisor’s question literally and *acknowledged* advice to focus on automating labor, but didn’t elaborate on his worry that doing so could raise fears of job displacement. As Clint did not seek advice on how to pilot his robot or elaborate on how Farm Robot could save farmers money, advisors did not have the opportunity to revisit their advice or offer further assistance. Advisors could only offer advice based on the information shared. Table 4 compares coproducing and literal advice interaction patterns over time. Although all firms engaged with the same set of advisors and received similar probing questions, entrepreneurs and advisors that engaged literally in interactions used a more limited set of moves: Advisors *probed* and *offered* advice, and entrepreneurs *acknowledged* and *answered*. Only one firm, Acre Data, used *elaborating* moves, a coproducing move, later in the observation period. No firms used *seeking* moves. Advisors did not *revisit* the advice they offered or *assist* with any requests for help. Advisors only used *revisiting* and *assisting* moves when entrepreneurs prompted them to do so.

**Discounting Advice.** After engaging literally with advisors, firms *discounted* advice. Unlike firms following an integrating process, firms following a distancing process did not translate advice to make it actionable. For example, Clint, from Farm Robot, explained how he interpreted the advice he received.

I get a lot of feedback on, I guess negative feedback on thinking through the distribution element of our thing. And it’s just, it’s too premature for me to think through it other than saying that it’s something that’s a risk for us.

Clint explained that advisors were focused on elements of the business—like distribution—which Farm Robot was not ready to tackle, rather than strategic elements he considered more urgent—like developing the robot for pilots. Clint thus *discounted* the relevance of the advice produced: “They’re [advisors are] all coming at it from very different perspectives... you’re not talking about something that everybody can relate to and everyone would buy.” Clint concluded that external advisors lacked the expertise needed to appreciate his firm’s strategy: “that is deeply frustrating... with a model like ours, it is complex.”

After several advice interactions questioning the value of the robot, Clint continued to grow Farm Robot’s technical team to build the product. Advisors had offered

advice to explore alternative ways to enter Farm Robot’s target market and broaden its appeal. Rather than form a hypothesis to test this advice, Clint rearticulated the theory articulated in Farm Robot’s initial strategy: “If we can get a path following robot into the marketplace for \$XX retail, people will... buy it.” Clint did not find any of the advice offered relevant for Farm Robot and *discounted* it, only testing elements of the firm’s planned strategy. All entrepreneurs that engaged literally in advice interactions later *discounted* advice, as shown in Table 5. They found advice irrelevant to their firms and attributed the lack of relevance to advisors, who, the entrepreneurs alleged, did not understand their firms’ strategies. Firms following a distancing process seemed to take the relevance of advice at face value. They were either unwilling or unable to expend additional effort on coproduction or translation.

**Testing Incrementally and Maintaining Strategy.** After *discounting* advice, these four firms tested incremental improvements to the products or resources in their *initial* strategies, in the markets previously identified. These firms did not open their aperture to form a hypothesis that tested any new strategy elements during our period of observation. As shown in Table 6, firms following a distancing process also tested fewer elements than integrating firms. Thus, they had no basis on which to compare alternatives to planned strategies. All four firms *maintained* their strategies across all phases, sharing the same strategy content with advisors each time. To illustrate this process, we trace Farm Robot’s strategy testing across three cycles.

In the first cycle, Farm Robot’s strategy focused on fruit farmers as the target market for its path-following robot that transported picked fruit. In the first action phase, Farm Robot tested this market segment, as specified in its *initial* strategy: “We have visited fields in person with three of the largest [berry and table grape] producers” and found that: “10% of farmers are progressive, early adopter types, who express a lot of interest/willingness to test and perhaps pay.” Farm Robot found that a big Berry Farmer was willing to pay for a pilot of the robot. Based on these results, Farm Robot decided to *maintain* its target market, product, and resources. During the second cycle, Clint shared the same strategy without coproducing advice. Clint received advice from Alan, a potential customer: “You’re thinking like this [made small hand space] and you need to be thinking like this [made big space between hands]. This is a unique application that solves problems across so many spaces.” Alan advised Clint to consider larger-scale corn farms, and other advisors offered alternative target markets for consideration. During the third cycle, Clint received similar advice. Yet, Farm Robot *discounted* all advice to consider alternative target markets. Clint told us he had no intention of pursuing corn farms or any of

**Table 4.** Patterns of Advice Interactions over Time

Process	Firm	First advice phase (N = 50)		Second advice phase (N = 54)		Third advice phase (N = 61)		Total (N = 165)						
		Literal	Coproducing	Literal	Coproducing	Literal	Coproducing	Literal	Coproducing					
		<i>P O c n</i>	<i>A R e s</i>	<i>P O c n</i>	<i>A R e s</i>	<i>P O c n</i>	<i>A R e s</i>	# AI	<i>P O c n A R e s</i>					
Integrating firms	Clean Water	■	■	■	■	■	■	12	■	■	■	■	■	■
	Fiber Snacks	■	■	■	■	■	■	14	■	■	■	■	■	■
	Direct Coffee	■	■	■	■	■	■	14	■	■	■	■	■	■
	Energy Data	■	■	■	■	■	■	14	■	■	■	■	■	■
	Agri Lignin	■	■	■	■	■	■	12	■	■	■	■	■	■
Distancing firms	Coatings	■	■	■	■	■	■	13	■	■	■	■	■	■
	Piglet Monitor	■	■	■	■	■	■	14	■	■	■	■	■	■
	Local Frozen	■	■	■	■	■	■	14	■	■	■	■	■	■
	Acre Data	■	■	■	■	■	■	15	■	■	■	■	■	■
	Waste Not	■	■	■	■	■	■	12	■	■	■	■	■	■
Pathogen Control	■	■	■	■	■	■	14	■	■	■	■	■	■	
Farm Robot	■	■	■	■	■	■	17	■	■	■	■	■	■	

*Notes.* Italics indicate advisor moves: *O*, Offering; *P*, Probing; *R*, Revisiting; *A*, Assisting. Entrepreneur moves: *c*, acknowledging; *n*, answering; *e*, elaborating; *s*, seeking. Black squares indicate a high level of use by participants (move used more than once in multiple interactions by multiple entrepreneurs or advisors). Dark gray squares indicate a moderate level of use (move used more than once in multiple interactions). Light gray squares indicate a low level of use (move used more than once in zero or one interaction). Most firms retained the same leadership and participation during the program, but Coatings replaced its CEO during the program. The first CEO participated in the first advice phase, and the second CEO participated in the second and third advice phases.

the other alternatives suggested by advisors and expressed frustration with the advice produced. Farm Robot continued its focus on developing the robot for pilots with existing customers.

Through three advice cycles, Clint received thematically consistent advice: to better demonstrate the value of the robot to multiple market segments and to broaden his target market. However, during advice interactions, Clint did not *elaborate* on why the alternatives *offered* were not relevant to Farm Robot’s strategy, nor did he *seek* advice on the strategy elements that he was most concerned about—such as developing his product. Without a deeper understanding of firm strategy, advisors were unable to tailor their advice to create relevance for Farm Robot. Thus, Clint *discounted* the advice offered. Throughout the study, Farm Robot only tested elements in its *initial* strategy without testing any alternatives, *maintaining* its focus on incremental tweaks to its product in its planned target market. All firms that distanced advice from strategy *engaged literally* with advisors, *discounted* advice, tested strategy elements planned in their *initial* strategies, and *maintained* their strategies. These firms did not explore any of the market alternatives suggested, nor did they iterate on their firm strategies. By the study’s end, these four firms each tested one *initial* strategy, while integrating firms each tested three different iterations of their *adapted* strategies, accelerating their discovery of broader target markets with each iteration.

**Transitioning from Distancing to Integrating**

Two firms (Piglet Monitor and Local Frozen) that followed a distancing process in the first advice phase

transitioned to an integrating process by using *elaborating* moves in the second phase and *adding seeking* moves in the third phase. In response, advisors to these firms increasingly used *revisiting* and *assisting* moves, as shown in Table 4. Changes in how these firms produced advice were followed by changes in how they used it. Table 6 shows that Piglet Monitor and Local Frozen changed the nature of their strategy tests after they began coproducing advice—only exploring *new* target markets after transitioning to coproducing moves. To illustrate this process, we trace how Local Frozen transitioned from a distancing to an integrating process.

In the first cycle, Paul, the CEO of Local Frozen, engaged in literal advice interactions. He described his firm’s strategy to develop shelf-stable, local products with a network of farmers, processors, and distributors and sell frozen fruit products to grocery stores. Derek, an advisor and potential partner, asked *probing* questions and *offered* advice to focus on the end customer: “*Why are they buying you? Because that will inform your marketing strategy.*” Paul *answered*: “*We share the story behind our brand on our website.*” Derek *offered* more advice: “*You have a whole group of millennials that care about that stuff. Ambassadors and cooking shows.*” Arnold, the COO of Local Frozen, *acknowledged*: “*We’ve focused so much on penetrations [in grocery stores]. You guys are totally right on engaging with the consumer outside of price.*” But, on returning to his office, Paul did not find this advice relevant to Local Frozen’s current B2B sales strategy and tried to reason why: “*A lot of people think we’re selling to an end consumer, when the consumer is not our customer, our grocery customer is our customer... we*



**Table 5.** How Advice Informs Strategy (Integrating or Distancing)

	Action phase			
	Advice phase Advice interaction Coproducting advice 6 firms	Interpreting advice Translating 6 firms (only 5 reengaged advisor)	Testing strategy New strategy element 6 firms	
Integrating (6)	<p>Energy Data (ED) <i>Advisor probed:</i> "What would be valuable data to have?"</p> <p><i>Advisee elaborated:</i> "We have to go out and find pre-sale information. We'd have to identify a specific farm, a specific customer that would test this."</p> <p><i>Advisor assisted:</i> "You need to think about the most valuable customer hypothesis." – mentor</p> <p><i>Coproducted relevant advice: Test varied customer segments.</i></p>	<p><b>Reengaged advisor:</b> with an investor about more diverse potential customers: "we actually spoke with him ... his VC firm provided other resources."</p> <p><b>Reassessed strategy:</b> "[The advice] made me examine our company a little more deeply ... a representative from Drinks Brand bottling ... she's kind of opened our eyes and [said] ... your product can extend beyond the market that you initially targeted."</p> <p><b>Formed new hypothesis</b> using advice: Can ED "improve energy management practices and drive cost savings without adding more headcount"? "We did customer discovery with indoor growers [using submetering equipment]."</p>	<p>Tested <b>new submetering</b> product integration with existing SaaS product with one potential customer in a <b>new</b> customer segment—indoor growers</p> <p>The new customer was satisfied: "We saw immediate value... We established a baseline of our facility's electric &amp; gas consumption ... then automatically track savings over time as we implemented efficiency upgrades."</p>	<p>In addition to selling to outdoor growers, ED decided to sell to indoor growers—using their test as a case study</p> <p><b>Advice integrated into strategy: Added a new market segment to firm strategy.</b></p>
Distancing (4)	<p>Engaging literally 4 firms</p> <p><i>Advisor probing:</i> "There's a farmer out there in his field ... what is he doing with it? I still don't understand what it is you guys are doing ... In a sentence what is it?"</p> <p><b>Advisee answering:</b> "In a sentence we provide data analytics to food processors like Brand, and nutrients providers like fertilizer-type people."</p> <p><i>Advisor offering:</i> "These are two different companies."</p> <p><b>Advisee acknowledging:</b> "That's true."</p> <p><i>Advisor offered advice: Simplify company pitch and focus on customer need.</i></p>	<p><b>Discounting</b> 4 firms</p> <p>Bill from Acre Data explained that the advice he received was not relevant, as his company was a large data provider and processor, which he did not think was well understood.</p>	<p><b>Initial strategy element</b> 4 firms</p> <p>Tested <b>incremental change</b> to data product (a nitrogen compliance report) with an <b>existing</b> customer. "If we ... simplify and automate... compliance reporting can we accelerate adoption of our business model?"</p> <p>Existing aggregator customer (Big Fertilizer Producer) found the product useful.</p>	<p><b>Maintaining strategy</b> 4 firms</p> <p>Continued to sell data to one existing customer, outlined in its initial strategy.</p> <p><b>Advice distanced from strategy: Incremental adaptation to product feature for the market initially identified – did not simplify customer pitch or explore new market.</b></p>

*Notes.* Energy Data and Acre Data had similar SAAS products and were both selling to agriculture customers. Italicized text signifies an advisor quote or move. Bold text signifies a code (or a final concluding sentence).

don't want to ignore the consumer, but they're not our customer." Paul *discounted* Derek's advice, and, instead, Local Frozen planned tests with grocery stores—its initial target market. However, unlike firms following a distancing process throughout the study, Paul used Derek's lack of understanding to identify a problem with how he communicated with advisors: "We learned what people didn't understand about our presentation and that forced us to revise our presentation to make it understandable ... to get fuller understanding [from advisors]."

In the second cycle, Paul engaged differently and coproduced advice with several advisors by *elaborating* in response to their questions. For example, John, the VP of sales, shared Local Frozen's planned growth strategy: "We started with fruit, we'll be adding frozen veg. The next part is dried fruit. Dried fruit is attractive to us because it follows the same model as frozen." At first, the advisors were not enthusiastic, and one asked: "Will people care [that it's local] with dried fruit?" John *answered*: "When people have the choice of buying local, ... they buy local." Patrick added that he could share these data and *elaborated*: "We're growing their category [grocery stores' local products], which they like." Hearing this, Chuck became convinced of the value of local dried fruit and *revisited* his advice: "With dry [fruit], you don't have cold storage costs." Chuck advised that dried fruit could improve margins by lowering costs, which might be more lucrative than expanding to frozen vegetables. Later, Paul *reassessed* Local Frozen's strategy: "It's [the value proposition's] something we've always been knocking forth on since inception of the company ... as we've solidified that around the actual customer and not the consumer ... we've gotten much better reactions [from advisors]." Paul and his team later translated Chuck's advice and *formed a new hypothesis*: Customers will pay a premium for local dried as well as frozen foods. Through testing this *new* product in varied markets, Local Frozen discovered that supermarkets liked the idea of local dried fruits and identified a *new* target market—local convenience stores. Based on data from these tests, Local Frozen *adapted* its strategy, adding a new product and broadening its target market. Paul shared this broadened strategy with advisors in the third cycle and coproduced new advice on his adapted strategy. Piglet Monitor made a similar transition: testing new strategy elements after it adopted coproducing moves.

These two transitioning cases are instructive, as they suggest that entrepreneurs can learn to use coproducing moves. In our study, this happened when entrepreneurs reflected on the advice given and were motivated to improve its relevance. Small differences in the moves used to produce advice set in motion larger differences in translation, strategy testing, adaptation, and iteration at later stages. Close examination of the Local Frozen case also suggests that without coproduction of advice

to create relevance, it may be difficult to translate advice to make it actionable for strategy. After entrepreneurs from Local Frozen and Piglet Monitor transitioned from engaging literally to coproducing advice, these firms *translated* advice, tested *new* strategy elements, and *adapted* their strategies. Local Frozen and Piglet Monitor were the only firms that made this transition, but most firms increased their use of coproducing moves over time, as shown in Table 4.

**Assessing Alternative Explanations.** Drawing on constant comparison methods (e.g., Glaser and Strauss 1967), we considered alternative explanations for the variation we found. We compared firms' founding characteristics, such as team size, firm age, firm subsector, and funds raised, as shown in Online Appendix D. None of these firm characteristics explained the variation observed. Were some firms more interested in incorporating external advice than others? We recoded the motivations and strategic priorities of each firm at program entry and did not identify any discernable differences. Did some firms receive advice from different sources? As shown in Online Appendix E, most firms interacted with the same advisors. Did some firms receive more advice or different types of advice that shaped their ability to use it? As shown in Online Appendix C, the timing, content, and number of advice interactions did not substantially differ across firms. Did some firms receive more novel alternatives than others? Entrepreneurs in all firms received advice that offered novel alternatives from their planned strategies, as shown in Online Appendix C. We did not observe differences in the types of advice offered that would explain variation in the process that firms followed. We also coded the length of advice interactions and those present. Entrepreneurs from all firms participated in public, structured advice interactions, in common contexts.

### Explaining How External Advice Can Inform Entrepreneurial Strategy

To develop grounded theory, we inducted a model that could generalize to other settings. As entrepreneurial firms form their initial strategies (Ott et al. 2017), entrepreneurs often consult with multiple external advisors (Cohen et al. 2019a, Bennett and Chatterji 2023). Advisors may offer novel alternatives, but these alternatives may not be initially relevant in their first formulation, and entrepreneurs are not always willing or able to translate suggested ideas into action. To overcome this challenge and integrate advice into firm strategy, firms followed the process shown in Figure 2.

When entrepreneurs coproduce advice, they share the context and rationale of their strategies, guiding advisors to understand the interconnected elements of their strategies. Advisors then revisit their initial advice or assist with the firm's most pressing priorities. This

interactive process helps both parties craft advice that is novel, yet relevant, for the firm, opening entrepreneurs' aperture to consider strategic alternatives that they may not have otherwise considered. Even after coproducing relevant advice, entrepreneurs do not simply pursue a prescribed course of action. Advice needs to be transformed for the firm to take action. To do so, entrepreneurial firms translate advice by reengaging advisors, reassessing their strategy, and forming new hypotheses. Firms do not simply take advice; they test it. The alternative strategies inspired by advice are translated into hypotheses that allow testing and comparison of new and planned strategy elements. If tests validate the viability of new strategy elements, firms choose to adapt their strategies. In short, entrepreneurial firms integrate external advice into strategy by: coproducing advice to make it relevant, translating advice to make it actionable, testing new strategic elements to validate strategy alternatives, and adapting strategies, contingent on test outcomes. Over time, iteration of these processes drives yet even broader exploration of strategy alternatives, altering the trajectory of entrepreneurial strategy formation.

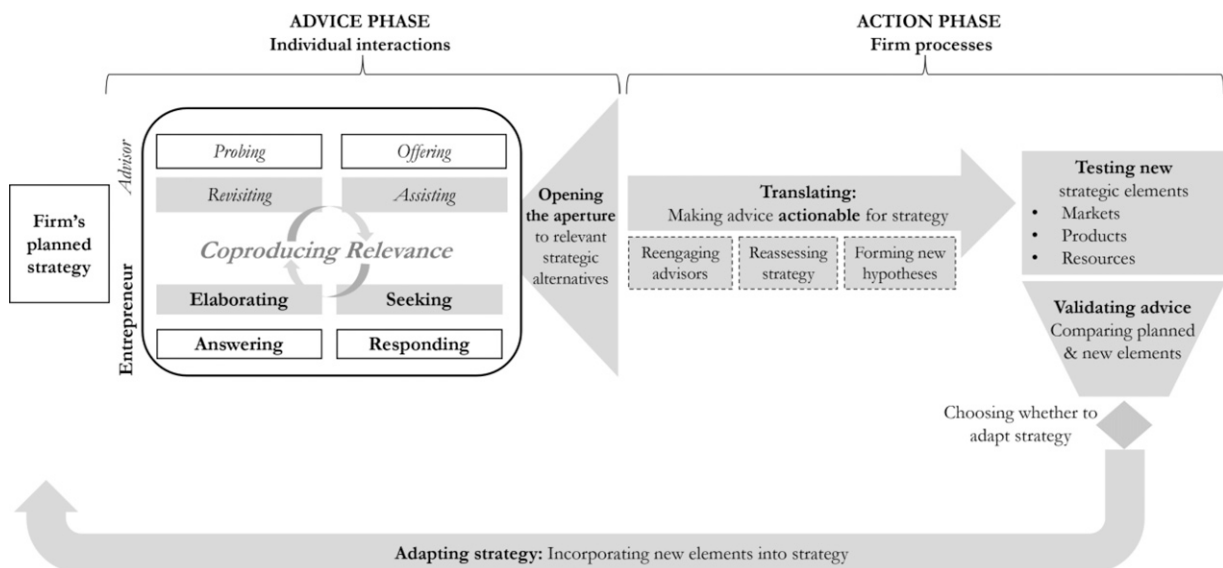
In contrast, when entrepreneurs engage literally with advice, they consider advice at face value. Although entrepreneurs may politely answer advisors' questions, advisors do not receive enough information during the interaction to fully comprehend the interconnected elements of the firm's strategy or the constraints present in the firm's context. This inhibits advisors from revisiting their advice or assisting with the firm's priorities and impairs the relevance of the advice produced, as shown in Figure 1. After engaging with advice literally, entrepreneurial firms discount the advice offered and do not

use translation practices to make advice actionable. Instead, firms test elements from their planned strategies without testing alternatives. These firms are unable to compare new with planned strategy elements and are less likely to adapt or iterate their strategies. Firms able to transition from literal advice interactions to coproducing ones will be more able to integrate advice into strategy.

### Boundary Conditions

We expect the process model we inducted to apply to other settings where firms are: (1) willing to share their strategies; and (2) advisors can offer relevant expertise. In our study, these two conditions may have positively affected the quality of advice interactions we observed. In other settings, where advice is less available, encouraged, or structured (e.g., Aldrich and Ruef 2018), we might expect to see more firms follow a distancing, rather than an integrating, process. The entrepreneurial firms we studied were in a common industry and at a common stage of development (with products in the market, all seeking equity finance). Future research, with larger samples and more variation in the types of firms studied, could unpack what predicts which firms integrate advice into strategy and which firms distance their strategies from advice. Based on test results, in our setting, all integrating firms broadened their target markets within the 11 months of study, with ramifications for strategy formation. Firms that integrated advice all explored strategy alternatives suggested by advisors and tested new strategy elements, producing more iterations of their strategies. Advice and strategy testing could influence strategy evolution, as entrepreneurial firms that adapt their strategies and broaden their scope

**Figure 2.** Integrating Advice into Entrepreneurial Strategy



Notes. Grey arrows and boxes denote where advice is integrated into strategy. Italics denote advisor moves, and bold denotes entrepreneur moves.

**Table 6.** Testing Entrepreneurial Strategy

Process	Firm	First action phase			Second action phase			Total tests					
		# Tests	Strategy elements tested		# Tests	Strategy elements tested		# Tests	Total strategy elements tested			Average	
			Initial	New		Initial	New		M	P	R		# Elements
Integrating	Clean Water	1	M	M	1	M&P	M&P	2	I&N	I&N	N	6	2.3 tests,
	Fiber Snacks	2	M	M, P	1	R	R	3	I&N	N	N	4	4.3 elements
	Direct Coffee	1		M	2	P, R	P, R	3	N	N	N	3	
Energy Data	Energy Data	1		M&P	1	M	M	2	N	N	N	3	
	Agri Lignin	1	M&P	M&P	2	M, R	M, R	3	I&N	I&N	N	6	
	Coatings	1		M	2	M, R	M, R	3	N	N	I&N	4	
Distancing	Piglet Monitor	1	P	P	1	P	P	2	I&N	I&N		2	2 tests,
	Local Frozen	1	P	P	1	M&P	M&P	2	N	I&N		3	2.5 elements
	Acres Data	1	P	P	1	R	R	2	I	I	I	2	1.5 tests,
Waste Not	Waste Not	1	P	P	1			1	I	I		1	1.5 elements
	Pathogen	1	P	P	1			1	I	I		1	
	Control	1	P	P	1			1	I	I		1	
Farm Robot	Farm Robot	12			2	P, R	P, R	2	I	I	I	2	
					14			14	15	15	7	37	

*Notes.* M, testing a market strategy element: “Our hypothesis was that universities will pay more for quality coffee and a more immersive student experience. We tested it by reaching out to five universities and we were able to sign [One], we we’re now in the process with [Two] and [Three] in Chicago.” – *Direct Coffee*.  
 P, testing a product strategy element: “If we ... simplify and automate ... compliance reporting can we accelerate adoption of our business model?” – *Acres Data*.  
 R, testing a resource strategy element (such as a new hire): “The team has changed. I’m the CEO now ... and that freed up equity for other technical roles ... [I spoke to a range of stakeholders about the team changes and] learned that our [Funder]-backed fund are still in and they didn’t care about the team change. I lost a lot of sleep over nothing.” – *Coatings*. I, present in initial strategy; N, new to strategy.

early are more likely to continue to do so as they mature (Sorenson et al. 2006). It could be fruitful to examine the long-term effects of advice and strategy testing to assess whether ongoing iterations of advice and testing expand the breadth of firm strategy over time.

## Discussion

Recent explorations in the foundations of entrepreneurial strategy outline how difficult it is to choose among strategy elements, given the uncertain and noisy values associated with strategy alternatives (Gans et al. 2019). Yet, with few exceptions (e.g., Agrawal et al. 2021), the search for strategy alternatives is modeled as a founder activity. In reality, many firms form their strategies while embedded within a rich ecosystem of trusted third parties and external stakeholders that offer advice to young firms. External advice has the potential to suggest novel ideas that can enhance the value of a firm's initial strategy (e.g., Chatterji et al. 2019, Hasan and Koning 2019a, and Assenova 2020), but this potential may not be realized if entrepreneurs cannot absorb and apply the ideas offered by outsiders. Often, advice is studied as if it were easily transmitted from a knowledgeable advisor to an entrepreneur, without examining the social interactions by which advice is produced and used. How does the social process of giving and receiving advice inform entrepreneurial strategy?

Our unique field research design enabled us to not only observe advice interactions in situ, but also trace when and how firms integrated advice into entrepreneurial firm strategy. With meticulous precision, we analyzed 165 live interactions and traced how 12 firms used advice in 26 subsequent strategy tests. We found that coproducing advice opened entrepreneurs' aperture to consider strategy alternatives, triggering a process of translation and testing, which fueled strategy adaptation. Although strategy testing is the subject of increasing popular and academic attention, little research examines how the strategy alternatives tested are generated and refined. This is a critical gap, as entrepreneurial firms cannot test all possible strategy elements at once (Gans et al. 2019), and testing is critical to forming a value-creating entrepreneurial strategy. We show how advice interactions provide an underappreciated antecedent to strategy testing that shapes the breadth of strategies considered and explored. We contribute a grounded theoretical explanation of how advice is produced and the conditions under which it is used with consequences for how entrepreneurial firms form their strategies. More specifically, we: (1) Reconceptualize advice as the product of interaction; (2) show how integrating advice into strategy requires transformation; and (3) explain the complementary roles of advice and testing in forming entrepreneurial strategy.

## Reconceptualizing Advice as the Product of Interaction

Prior research suggests that characteristics of the advisor or the entrepreneur, or the match between them, determines the usefulness of advice (e.g., Reyt et al. 2016, Bryan et al. 2017, Harrison and Dossinger 2017, Ciuchta et al. 2018, Grimes 2018, Chatterji et al. 2019, Hasan and Koning 2019a, b, and Assenova 2020). Building on recent approaches to examining the dynamics of help and feedback (Grodal et al. 2015, Harrison and Rouse 2015, Feldman and Kahn 2019), we observed advice interactions and traced how firms later made use of advice. All advisors in our study actively probed all entrepreneurs with equivalent intensity prior to offering advice, but this was insufficient to appreciate the complexity of entrepreneurial strategy. We discovered that the moves entrepreneurs and advisors used during interactions determined whether entrepreneurs later found external advice to be relevant to firm strategy. This shifts the analytic lens from static characteristics predicting advice by transmission to the dynamic moves used in *advice interactions*. In doing so, we not only reconceptualize what constitutes advice, but also shift the empirics to an earlier point in the process: the interactions that precede the production of advice.

Rather than conceptualize advice as a discrete nugget of information that entrepreneurs either take or leave behind, we show how entrepreneurs have agency in creating advice that has relevancy for their firms. When entrepreneurs seek advice or elaborate on their responses to advisors' probing questions, they guide advisors to tailor their advice to meet firms' needs. Using these moves, entrepreneurs share their firms' context to foster a mutual understanding (e.g., Bechky 2003a, b) of how strategy elements are interconnected. Rather than passively accept or reject advice, entrepreneurs have a critical role to play in producing it—by challenging advisors to create relevant advice. Together, entrepreneurs and advisors can coproduce external advice that is simultaneously novel and relevant to entrepreneurial strategy.

In contrast, entrepreneurs following a distancing process appeared to expect relevant advice to be handed to them in usable form. These entrepreneurs interacted with the same set of advisors, but engaged literally, answering advisors' queries and politely acknowledging advice. Advisors did not revisit their advice to tailor it to meet the firms' needs, nor did they assist with specific requests. These entrepreneurs subsequently discounted advice as irrelevant—leaving the potential value of strategic alternatives that might seem divergent or weird (Sutton 2007) unexplored. A founder's identity could inhibit their ability or willingness to coproduce advice and integrate it into strategy (Grimes 2018, Zuzul and Tripsas 2020). Yet, rather than be deeply ingrained, the transitioning firms uncovered in our research suggest that coproducing advice is a

learnable practice. Future research could examine how identity might play a role in which founders coproduce advice or are willing and able to learn to do so.

Our research suggests that when an entrepreneur receives “bad” advice, they are at least partially responsible for not elaborating on their context and challenging advisors to produce more relevant advice. In short, the onus is on entrepreneurs to work with advice that does not initially appear relevant and challenge advisors to mine their expertise and create advice with relevance for firm strategy. In the process, the content of advice itself may change. This suggests moving from examining “why don’t entrepreneurs take advice?” or “which entrepreneurs take advice” to: “How can entrepreneurs work with external advisors to coproduce relevant advice?” We contribute an explanation of the mechanisms that advice-seekers can use to make the most of advice offered: transforming novel alternatives to become relevant for firm strategy. In short, we shift the conversation from entrepreneurs “taking advice” to “making advice.”

### Integrating Advice into Strategy Requires Transformation

Research has examined the many challenges that firms face when trying to absorb or attend to external information—even when motivated to search for novel ideas (Cyert and March 1963, Cohen and Levinthal 1990, March 1991, Piezunka and Dahlander 2015, Dahlander et al. 2016). To integrate new ideas or to build upon the ideas of others, simply sharing or transferring information between parties is insufficient (Murray and O'Mahony 2007). As Carlile (2004) explains, the actual synthesis of external information within the firm is a complex process requiring transformation, which can change the substance of the underlying ideas (Carlile and Reberisch 2003). For example, when people are involved in the production of knowledge and collectively create solutions to problems, they are more able to use those solutions (Brown and Duguid 1991, Hargadon and Bechky 2006). Thus, integrating novel or potentially diverging information is not just an information task, but also a relational one (Long-Lingo and O'Mahony 2010). Unless experts represent information “within their domain in a useful way to outsiders, it will be as if it does not exist” (Carlile and Reberisch 2003, p. 1189). This suggests that coproducing advice is an essential first step to motivating the translation work necessary to make advice actionable and testable. Thus, the process by which external ideas are introduced into the firm is a crucial precedent to determining their potential for integration. Yet, few analyze how external ideas are translated and tested within the firm.

At a granular level, we trace how ideas suggested by those outside the firm were transformed and applied within the firm. Even when advice was considered relevant to firm strategy, it still required translation to

become actionable: We identify the practices that entrepreneurs used to make this happen. To translate advice, entrepreneurs reengaged with advisors to clarify advice, reassessed their strategies to consider new elements, and formed new testable hypotheses. Advice was often offered in the moment as advisors reacted with suggestions based on what entrepreneurs shared. When entrepreneurs left advice interactions, they needed time to absorb and consider the implications of acting on these strategy alternatives. Reengaging with advisors helped clarify how to act on the advice offered: What adaptations would be needed to pursue an alternative course of action? Because entrepreneurial strategy is complex with interconnected elements, entrepreneurs reassessed how their planned strategies would be affected if they acted on advice. This required changing the lens through which firms viewed their strategies. Thus, integrating advice into entrepreneurial strategy does not just depend on coproduction to create relevance. Firms must also translate external ideas by absorbing and clarifying them, reassessing the implications of strategy alternatives and testing their potential.

For example, for Clean Water to explore the alternative markets suggested by advisors, they needed to create a simpler filtration product that would address the needs of a broader market and create new sales and distribution channels. Reengaging with advisors and reassessing their strategy helped Clean Water form hypotheses that could test these two new types of strategy elements prior to extensive commitment. These tests were not a direct application of advice, but reflected the transformation of advice: from advisors’ suggestions to consider the food and beverage market to conducting interviews with microbreweries on their water-filtration needs. The integrating firms in our study did not always create formal scientific hypotheses, but even informal inquiries were important, as this is where advisors’ suggestions manifested in testable form. By showing how entrepreneurs’ hypotheses, in any form, drive the substance of what is tested, we contribute to an emerging literature on the relationship between entrepreneurial experimentation (Camuffo et al. 2020, Felin et al. 2020, Leatherbee and Katila 2020) and the evolution of entrepreneurial strategy.

### The Complementary Roles of Advice and Testing in Forming Entrepreneurial Strategy

Entrepreneurial strategy is formed as firms make choices among viable alternatives, but time and cost constraints prevent testing all possible alternatives (Gans et al. 2019). Although research has examined entrepreneurial firms’ propensity to test their strategies and the outcomes for firm performance (e.g., Camuffo et al. 2020 and Leatherbee and Katila 2020), less research examines how firms choose what strategy tests to conduct. Gans et al. (2019) argue persuasively that these choices must be made, but

the process by which entrepreneurs decide what to test is unclear. This is an important gap, as the strategy alternatives that firms test can have consequences for the trajectory of entrepreneurial strategy (Felin et al. 2020). Although strategy choices are often modeled as a within-firm activity, in reality, many entrepreneurs make choices embedded within a rich ecosystem of trusted third parties and external stakeholders that offer ideas, guidance, or advice to entrepreneurial firms (Cohen et al. 2019a, Agrawal et al. 2021).

With our field research design, we examined not just whether firms tested their strategies, but also how entrepreneurs formed the hypotheses tested. Our observational field methods examined strategy testing within a social context, where advice was given and received in abundance, but not always used. With a holistic lens into the full process of producing and using advice, coupled with precise empirics, we unearth the complementary roles that advice and testing serve when forming entrepreneurial strategy. As our study shows, the role of advice is not to tell entrepreneurs what to do, but to open firms' aperture to consider varied alternatives. If strategy formation requires both thinking and doing (Ott et al. 2017), then the role of advice is to help firms think differently and reassess what strategies to test. Yet, even after advice is coproduced and translated into action, advice only offers rough suggestions to direct search. For example, advice helped Agri Lignin identify a new alternative market (garden nurseries), but the test specified where a viable market actually existed: garden pot manufactures. Advice helped Clean Water identify a new alternative market (food and beverage producers), but the test honed where the real market existed: medium-sized breweries. Advice can redirect the landscape for search, but which strategy elements will be viable is still fuzzy. We found that the role of advice is to help open firms' aperture to consider broader strategy alternatives, whereas the role of testing was to validate which strategy elements will create the most value. By examining advice and testing together, we offer one explanation of how entrepreneurial firms choose what strategy elements to test when forming their strategies.

Scholars have shown that entrepreneurial firms can benefit from considering multiple strategy alternatives (Gruber et al. 2008, 2013, Furr 2019, Agrawal et al. 2021). We discovered that firms integrating advice into strategy tested more strategy elements in the same amount of time than firms that distanced advice from strategy. Even though all firms in our study were advised to consider and explore new elements, only integrating firms did so. Small differences in advice interactions became magnified, as advice triggered successive iterations of strategy testing and adaptation. Integrating firms tested more strategy iterations than firms distancing from advice, accelerating exploration of a broader set of market alternatives over time. Firms that integrate advice

into strategy may thus quickly learn which growth pathways to prioritize and thus "where to play" (e.g., Gruber et al. 2008 and Gruber and Tal 2017). Furthermore, testing in broader markets may help entrepreneurial firms convince investors of their potential to address a larger total addressable market—increasing their attractiveness for both partnership and investment (McDonald and Gao 2019, Gompers et al. 2020). We thus contribute a novel mechanism to explain heterogeneity in entrepreneurial strategy formation: Integrating external advice into strategy testing can accelerate broader exploration of strategy alternatives. When young firms make decisions such as whether to serve new market segments, add new products, or hire new types of expertise, these decisions can have long-term implications. Firms that learn how to broaden their markets early may continue to do so over time (Sorenson et al. 2006). Early stage strategy decisions can have longer-term consequences, either through path dependencies or imprinting (e.g., Burton and Beckman 2007, Marquis and Tilcsik 2013, and DeSantola and Gulati 2017).

### Policy Implications

Our grounded theoretical model provides practical guidance not only for entrepreneurs in the throes of forming their strategy, but also for any executive seeking advice. When seeking advice, executives might benefit from reconsidering the moves they use in advice interactions and how they respond to advice that misses the mark. Our research also has implications for the design of entrepreneurial training programs (Cohen et al. 2019b). The firms that transitioned between processes suggest that coproducing moves can be learned. In addition to recruiting high-quality advisors and "coachable entrepreneurs," entrepreneurs could be taught to use coproducing moves when the advice proffered does not initially seem relevant. Advisors could be taught to revisit their advice when entrepreneurs push back on the relevance of advice offered. Rather than simply take or leave advice, entrepreneurs could learn how to funnel advice into strategy tests to compare what advice to test and what to leave behind. For entrepreneurs stuck in cycles of narrow testing, advice interactions may help broaden the alternatives considered.

### Conclusion

External advice is particularly valuable to entrepreneurial firms due to their limited size, organizational knowledge, and capabilities (Stinchcombe 1965, Ruef et al. 2004, Posen and Chen 2013, Cohen et al. 2019a). External advice can prevent premature satisficing (Cohen et al. 2019a) and help identify novel strategy alternatives. But external advice, no matter how well intentioned, can also be difficult to understand, absorb, and apply. Furthermore, not all advice, easily formulated in the moment by

outsiders, should be absorbed or applied. We explain how some entrepreneurial firms surmount this challenge, by (1) coproducing advice to create relevance for the firm; (2) translating advice to make it actionable for the firm; and (3) testing advice, as well as planned strategies. When entrepreneurs coproduced advice and expended effort translating and testing the novel alternatives suggested by others, they adapted their strategies to address broader markets. Our research explains how the process of integrating external advice enabled firms to test more strategy alternatives than they might have otherwise and trigger strategy adaptations.

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### Endnotes

<sup>1</sup> <https://www.techstars.com/the-line/advice/mentor-manifesto>.

<sup>2</sup> Informants from Equity reported that Equity interviewed each founder: “[to] see if they’re coachable.” For example, “do they [entrepreneurs] know where they need help?; “a good founder needs to be self-aware.” Equity also evaluated a team’s ability to learn from advisors, as the program manager explained: “They have to recognize the value they can gain through that process ... A red flag is when people are very wary about sharing information.”

<sup>3</sup> One firm, Coatings, replaced its CEO during the program. The first CEO attended the first workshops and used predominantly coproducing moves. The second CEO attended the second workshop (as the Chief Science Officer) and the third workshop (as the CEO) and used predominantly literal moves.

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