

Good for the soil, but good for the farmer? Addiction and recovery in transitions to regenerative agriculture

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ABSTRACT

While the ecological benefits of regenerative agriculture (RA) are becoming clearer, its effects on farmers themselves are less well-understood. This paper's aim is to understand how farmers experience transitions from industrial agriculture to regenerative agricultural practices. Drawing on the 'good farmer' concept of identity, we provide a qualitative, narrative analysis of 51 farmers in United States' Central Great Plains region, who, at various points in time, began transitioning to RA. We found that transitioning farmers set themselves apart from those practicing industrial agriculture, including their past selves, who constituted an 'other' against which they contrasted their emerging identities as 'regenerative' farmers. These farmers used the discourse of addiction to describe industrial agriculture, seeing RA as a form of recovery from the chemical-intensive and subsidy-fueled treadmill of production that characterizes industrial agriculture. RA is experienced as a process of recovery that entails shifts in farmers' identities as 'good' farmers.

1. Introduction

The demise of civilizations can be attributed to the degradation of soils (Lowdermilk, 1950; Montgomery, 2012). Evidence suggests that history may be repeating. The world's soils have lost a total of 133 billion tons of carbon since humans first started farming the land approximately 12,000 years ago (Sanderman et al., 2017). Soil erosion from agricultural fields is estimated to be 10 to 20 times (under no tillage) to more than 100 times (under conventional tillage) higher than the soil formation rate (UN Environment Programme, 2020:7). If current rates of soil loss continue, only one-quarter of all arable and productive land per person in 1960 will be available in 2050 (Food and Agriculture Organization of the United Nations, 2011).

The problems of industrial agriculture are not limited to soil. In 2019, the agriculture sector contributed 5.79 gigatons of greenhouse gas emissions (CO₂e), which, including land-use change and forestry, represented 11.65 percent of total sector emissions (World Resources Institute, 2022). Industrial pollution via nitrogen runoff is the leading source of water pollution in rivers and streams, the third-largest source for lakes, and the second-largest source for wetlands (Lindwall, 2021:7). Pesticides are routinely detected in 88 percent of streams and rivers

(Covert et al., 2020), and more than 90 percent of USA residents have pesticides in their bodies (Chiu et al., 2018). Industrial agriculture has accounted for 60 percent declines in wildlife populations since 1970, and at least one million species are threatened with extinction (World Wildlife Foundation, 2018:7).

"Regenerative agriculture" (RA), has emerged as a leading response to the problems of industrial agricultural practices (O'Donoghue et al., 2022). RA is a "place-based management philosophy whose adherents think about their land, their businesses, and their communities as dynamic ecosystems, contrary to today's dominant industrial agricultural model" (Sharma et al., 2022:8). RA is neither a new concept nor practice; RA mimics and employs indigenous principles that have been practiced for centuries (Carlisle, 2016, 2022; Dahlberg, 1994). RA practices are heterogeneous (Newton et al., 2020; Rehberger et al., 2023), and although no one accepted definition of 'regenerative' exists, U.S. mainstream RA discourses typically recognize five principles (Brown, 2018; Fuhrer, 2016; Ibrahim and Ahmed, 2022:5–6; Khangura et al., 2023:2): (1) limit soil disturbance; (2) keep armor (cover) on the soil surface; (3) build diversity; (4) keep living roots in the soil; and (5) integrate animals.

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RA's benefits for ecosystems are becoming clearer, as evidence demonstrates that the more complex, diverse landscapes that RA promotes host more biodiversity than simpler ones (Estrada-Carmona et al., 2022; Karp, 2022; Kremen and Merenlender, 2018). RA has proven to repair soil health and biodiversity, increase the amount of soil organic carbon in existing soils and build new soil (Rehberger et al., 2023; Rhodes, 2017), sequester carbon (Burgess et al., 2019:3), improve water infiltration rates (Strickler, 2021:173–209), and improve resiliency to droughts (Basche and DeLonge, 2019).

While the ecological benefits are becoming clearer, the benefits of regenerative agriculture for farmers themselves are less well-understood. The process of shifting from chemical-intensive, industrial practices to more labor-intensive regenerative practices can require considerable spans of time – often measured in years – before measurable soil quality improvements become evident, even as farmers and ranchers incur the immediate costs of transition (Jacobs et al., 2022). How do farmers experience the transition from industrial-conventional to regenerative agriculture? How does the shift to more regenerative practices shape the well-being of farmers? Does regenerative agriculture restore and renew the farmer as well as the ecosystem? We investigate these questions through in-depth interviews among farmers and ranchers in USA's Central Great Plains region that vary in the breadth, intensity, and length of time with which they have employed regenerative practices. We try to understand how farmers experience the transition to RA, and our findings complement other 'good farmer' research on farmers' experiences transitioning away from productivism (Burton and Wilson, 2006; Cusworth, 2020; Haggerty et al., 2009; Marsden, 2013). Our primary contribution is showing how farmers' conceptions of themselves as 'good farmers' are imbricated with transitions to regenerative agriculture, exploring how farmers at different stages of the transition navigate and negotiate shifting identities and practices.

2. Background: good farming, and transitioning to regeneration as recovery

Farming is an identity derived from a way of life, such that to farm the soil is to "farm the self" (Bell, 2004:122). Thus, inherent in farming are moralized concepts of what it means to be a 'good' farmer (Riley, 2016a; Stock, 2007; Sutherland, 2013), which is usually conceived in terms of demonstrating a "high level of competence in the performance of professional farming activities" (Burton et al., 2021:129). The 'good farmer' concept is dynamic, geographically dependent, has evolved over time (Riley, 2016a), and was categorized by Burton et al. (2021:68) into three broad periods.

Pre-industrial European farming (14th–17th c.) was rooted deep in religious sentiments valuing fair treatment of wives, family members, servants, and "untidy farming" that worked with nature (Burton et al., 2021:41–45). In a subsequent era, tidy farming became the norm (18th–19th c.) due to the invention of the drill and corresponding "drill husbandry" (45–48, 57–59), a rapidly growing world population, and the industrial scaling up of agriculture to maximize food production (130–131). Maximizing yields became a central moral imperative of 'good farmer,' and the productivist norm was supported later with further technical innovations such as fossil fuel-powered tractors, anhydrous ammonia, seed and biotechnologies commoditization (Goodman et al., 1987; Kloppenburg Jr., 2005; Otero, 2008; Quinn and Carlisle, 2019). During the 1970s and 80s (3rd period), however, 'alternative' farmers, activists, and organizations questioned and opposed the "feed the world" moral imperative because they recognized the cumulative effects of industrial productivism on ecosystems, the climate, and rural communities (Burton et al., 2021:131). Alternative farmers (re)turned to prioritizing practices and principles of stewardship, conservation, environmental protection, multifunctionality, and community wellbeing (131). RA practices codified during this third period are renamed and reclaimed ways of farming practiced in pre-industrial times (Duncan et al., 2020).

Alternative farmers today enact several, fragmented moral imperatives (Burton et al., 2021:132), including conservationist, civic-minded, and naturalist (McGuire et al., 2015), but productivism remains the leading moral conception of what it means to be a good farmer in the U.S., as evidenced by mainstream agricultural discourses and practices. Productivism is the predominant form of discourse promoted by mainstream agricultural organizations like the U.S. Farm Bureau, and productivist messaging appears throughout the landscape, including Kansas, where signs along Interstate 70 – a principle highway linking the East and West coasts of the country – claim: "1 Kansas farmer feeds 155 people AND YOU!" Despite a wider scope of farmers consulting RA more recently, regenerative practices remain marginal in comparison to industrial agriculture, even if cover crop adoption – a key practice of RA – estimates of 20 million acres by 2020 and 40 million acres by 2029 materialize (Hamilton et al., 2017). Today, continuous no-till has been adopted across only 21 percent of all cultivated U.S. cropland acres (Crech, 2017), and as a share of harvested cropland (excluding alfalfa), cover crop adoption increased only from 3.4 percent in 2012 (10.3 million acres) to 5.1 percent in 2017 (15.4 million acres) (Wallander et al., 2021).

Although productivism remains the central moral imperative in U.S. agriculture, most farmers who rely on farming as a primary source of income struggle to make ends meet. While farmers earned 40 cents from every dollar of sales in 1910, net income from producing crops and livestock has fallen to Depression-era levels—farmers now earn only one penny from each dollar of farm sales (Meter, 2021:33). Most value in the agri-food system is now captured by global input suppliers, processors, distributors, retailers, and financial institutions (Carolan, 2022:30).

Government subsidies, direct payments, price supports, and crop insurance policies incentivize farms to prioritize production, especially for larger, industrial farmers. Farmers in the industrial model thus confront a political economy in which they are price-takers for the products of their labor. They are dependent on larger, consolidated, and much more powerful actors who both control access to the markets and set the terms of the market for farm outputs (Bruckner, 2016; Hendrickson et al., 2020; MacDonald, 2020). Moreover, price-taking farmers are forced down one of two paths: get bigger, or get out and go small. Built on the moral imperative established by Earl Butz's infamous "get big or get out" slogan (Philpott, 2008), a bifurcated farm structure with a hollow middle often makes farmers choose to either continually intensify industrial production or focus on small-scale specialty production reliant on direct-to-consumer markets (Lyson et al., 2008).

A farmer's level of protection from the federal government is almost entirely based on their farm's actual production history over the past five years (USDA RMA et al., 2023). Cover crops – a central component of many RA strategies – can weaken the strength of government protection. Cover crops can help build soil organic matter, which can improve fertility and yields in the long-run, but in the short-run they can seem like a sunk cost that threatens yields, and thus the farmer's bottom line (USDA SARE et al., 2020). Cover crop intensification can result in lower commodity yields, which leads to higher farmer insurance rates; together, they diminish a farmer's level of federal protection.

As the case of cover crops shows, farmers transitioning to RA face significant risks, and these risks are economic and socio-cultural in form. They are bound up with a way of farming that has become known as 'conventional' or industrial agriculture—an input-dependent, chemical-intensive, mono-cultural set of practices that have re-shaped agriculture into an industrial form on a global scale (Buttall, 2001; Friedmann, 1993; Lobao and Meyer, 2001). The industrial model is characterized by a productivist culture that above all else valorizes rationality, efficiency, and expansion of outputs (Burton, 2004; Setten, 2004). By maximizing production, however, the 'good' farmer has been caught up in the agricultural production treadmill, in which they must continually expand production output to maintain living standards (Curran, 2017; Levins and Cochrane, 1996). The production treadmill is supported by

government subsidies and price supports, which encourage farmers to incur increasingly large debt loads to further capitalize and mechanize their operations and expand production (Sanderson and Hughes, 2019).

Productivist culture supports the production treadmill, providing normative motivation and value affirmation for farmers practicing the industrial model of agriculture. Stepping off the treadmill thus involves not only economic risks, but risks to one's very identity. The risks of transition are also more-than-economic, extending to the symbolic and cultural aspects of agri-culture, and thus, to one's sense of self, purpose, meaning, and being. Agriculture is cultured. Farmers draw upon constellations of norms, values, beliefs, and symbols in communities of practice (Bell, 2004), and in the process, farming practices are imbued with meaning as farmers co-produce landscapes and themselves (Vanclay and Enticott, 2011).

Although implementation of regenerative practices is ultimately a decision for each individual farmer, farmers are members of communities from which they find meaning and take meaning-making actions. Research on the 'good farmer' examines how various community capitals (Bourdieu, 1986) relate to farmer participation in agri-environmental scheme (AES) (Burton and Paragahawewa, 2011; Cusworth, 2020; Forney et al., 2018; Riley, 2016a; Riley et al., 2018). However, because rural communities face dwindling populations and labor shortages (Johnson and Lichter, 2020; Sutherland and Burton, 2011), it can be more difficult to build the community capacity to encourage AES participation. Some argue that this is one reason why regenerative agriculture is not as concerned with broader structural changes as agroecological policies, practices, and discourses (Bless et al., 2023; Brescia, 2017; Shiva, 2022), which can hinder transformational systems change (Gosnell et al., 2019). Foregoing the security of government supports can make the risks of transitioning off the production treadmill excessive for many farmers, especially since doing so exacerbates income uncertainty and financial volatility year-to-year (Dudley, 2000).

The pressures and strains of the industrial model are accumulating for farmers. When the surrounding farm structure strips farmers of most of their autonomy, makes it almost impossible to make a net profit from production, and leaves farmers' livelihoods to the whims of governmental programs, policies, and politics, it is not surprising that farmers face rapidly declining mental and physical health (Beard et al., 2014; Bondy and Cole, 2019; Mylek and Schirmer, 2015; Peel et al., 2016; Vayro et al., 2020:165) in an array of contexts (Austin et al., 2020; Carter and Marony, 2021; Ellis and Albrecht, 2017; Huth et al., 2018; Letourneau and Davidson, 2022). In the USA, where the industrial model has perhaps been taken the furthest, farmers are more than twice as likely to die from suicide compared to the rest of the population (Norrod, 2021). Industrial agriculture is a major driver pushing ecosystems beyond planetary boundaries (Campbell et al., 2017), and it appears not only ecologically unsustainable, but socially unsustainable as a means of maintaining communities and renewing farmers.

In this context, growing numbers of farmers are looking to alternative forms of agriculture, including regenerative practices, as a means of restoring soil health and renewing ecosystems in working landscapes. We explore how farmers navigate transitions from the productivist ideal of the good farmer toward emergent practices, cultures, and identities in the context of the agricultural production treadmill.

3. Methodology

Semi-structured, in-person interviews were conducted with 51 farmers between June–August 2021 and January–February 2022. All but two resided within central Kansas, in the USA's Great Plains region. Using purposive sampling (Bernard, 2017), we initially interviewed 24 farmers who were enrolled in a regenerative agriculture pilot program, supported by a large, multinational food corporation. To further extend and diversify the group of interviewees, we asked farmers in the initial group to identify others who were interested in, or were trying to,

employ RA practices on their operations in the region. We identified 27 other farmers using this hermeneutical snowball sampling (Noy, 2008).

As discussed earlier, regenerative agriculture features a plurality of meanings, definitions, place-based origins, genealogies, and discourses (Burgess et al., 2019:8). Although 'regenerative' practices attempt to go beyond sustainability, the term has become a catch-all concept for anti-industrial practices (Bless et al., 2023; Gibbons, 2020). Bless et al. (2023:10) identify five agricultural narratives—organic, conservation, sustainable intensification, agroecology, and regenerative—and their geographical origins, founding actors, social-ecological triggers, challenge to industrial agriculture, and status. Relatedly, Gordon et al. (2023) consult nine discourses that contribute to RA's storyline: Restoration for Profit; Big Picture Holism; Regenerative Organic; Regrarian Permaculture; Regenerative Cultures; Deep Holism; First Nations; Agroecology and Food Sovereignty; and Subtle Energies. Varying RA discourses result in its four "tensions" of genealogy and holism, equity and power, definition, and departure (1835). To the third, in systematically reviewing scholar and practitioner definitions of RA, Newton et al. (2020:7–8) find five types of RA definitions that are used: no definition offered; outcome-based, process-based, combined process- and outcome-based definitions; or definitions with multiple processes and/or outcomes.

We recognize the importance of privileging a plurality of narratives to allow for diversity (Page and Witt, 2022), placed-based context (Bless et al., 2023; Loring, 2021; Pascucci, 2020:323) and acknowledge the substantive differences among the practices and narratives that are increasingly assumed under the label 'regenerative'. However, because RA's definitional ambiguity better allows corporations to shape discourses to their own ends, which can lead to cooptation and greenwashing (Giller et al., 2021:16; Gordon et al., 1845), our study uses a process-based definition focusing on "the inclusion or exclusion of one or more agricultural principles and/or practices...that define what types of agriculture may be considered regenerative (Newton et al., 2020:6–7). Our RA definition—a socially (re)produced ecological and biological system for growing food and restoring degraded soil and landscapes (adapted from Brown 2018:11)—assesses farmers' practices based on RA's five principles. This process-based definition acts as a continuum, from industrial (0) to regenerative (5), with industrial agriculture being the most ecologically extractive and regenerative agriculture the least extractive (Anderson and Rivera-Ferre, 2021). We employ this process-based definition that focuses on five principles because it is producer-driven, treats farming styles as a continuum (Page and Witt, 2022), and the principles are most "common and are perhaps the norm" in the field at this time (Newton et al., 2020:8). For these reasons, process-based definitions hold potential implications for policymaking around RA, especially for certification programs (e.g. Savory Institute, 2023) and carbon sequestration payments (Lal, 2019, 2020). However, because this process-based definition mainly relies on farmers to prove that they are indeed making measurable progress in the process of transitioning (Fenster et al., 2021), producers and their consultants acknowledge that this definition faces an epistemic barrier given that the efficacy of practices underlying the ascribed principles was determined based on what was visible, and not what was invisible or left unsaid (Carolan, 2006).

While visiting the first 24 farmers' operations and interviewing them, we developed a framework to understand why each was categorized in the manner they were. Consulting this framework, we categorized the remaining 27 based on what we saw during our tours of farmers' operations and what the farmers told us. Principles in the process of being added or removed were not counted; only those visibly demonstrated were categorized. All protocols for ethical research with human subjects were followed and the research was approved by the Institutional Review Board at the authors' university-affiliated institution.

Throughout the fieldwork, we sought to be conscious of how our positionality shaped interactions with interviewees. We are two white

males with rural, farming backgrounds, so it was not very difficult for us to pass as ‘insiders’ among the interviewees. Farmers likely felt more comfortable opening to us because we looked like farmers, dressed like farmers, used the language of farming, and had knowledge about the work and lifestyle. We asked questions about wellbeing adapted from questionnaires developed to survey farmers about their physical and mental health (e.g. “what makes you get out of bed in the morning?”) (Cummins et al., 2003; Dodge et al., 2012; Peel et al., 2016), as well as questions about how their identity is shaped by their neighbors, community, and close farmer friends and neighbors. It is also worth noting that, when prompted, we also inquired into how producers understood the relationship between their religiosity and their farming practices, as there is research demonstrating the importance of religiosity for ordering morality in and toward nature (Farrell, 2015).

We conducted comparative narrative analysis to “discern the underlying patterns and practices” that shape farmers’ experiences (Morrison, 2005:249). Narrative approaches engage people in meaning-making dialogues that help move beyond a strict problem to more general social phenomena (Fraser, 2004). They reveal relationships between “deep, macrolevel structures and surface, microlevel structures” (Franzosi, 1998:525), revelations that are essential for social psychological studies like these. Narrative analysis is “less interested in historical master narratives than in the space of everyday practices” (Keunen, 2005:548), making it most suitable for our purposes, as everyday narratives help researchers explore the rules of identity formation (548). The foundational building blocks of narratives are stories, which are “a basic human strategy for coming to terms with time, process, and change” (Herman et al., 2005:ix). Because they can contain multiple truths (Josselson and Lieblich, 1999), they should be compared across story-tellers (Abell, 1987). And, because interviewees chose “chronological, cyclical, or kairotic” timeframes when telling their stories (Czarniawska, 2004:52), we sought to capture the experiences of farmers with varying principles practiced at different points in time. We structured questions that prompted answers in the past continuous (“I was trying to plant rye but ...”) and past perfect (“I had tried to plant rye but ...”) tenses. Thus, our thematic analysis compares farmers to other farmers and farmers to their past selves and practices.

Extending narrative analysis in agri-food systems research (Bellon and Bell, 2021; Beus and Dunlap, 1990), our analysis process consulted Riessman’s (1993:10) levels of representation of experiences: attending, telling, transcribing, analyzing, and reading. We sought to be “careful observers” of subtle factors, attending to the physical setting in which the interviews took place (Merriam, 1998:97). Interviews were conducted *in situ*, at living room tables, over dinner, in the cabs of combines, tractors, on irrigation equipment, while helping with chores, and so forth. We treated interviews as activate sites of narrative production and distribution, where researchers extend and clarify narratives previously produced (Czarniawska, 2004). Interviews were transcribed using Otter.ai, and farmers were assigned pseudonyms to provide anonymity.

Fig. 1 places the farmers we spoke with on a continuum from beginning the RA transition (practicing 1 principle) to complete

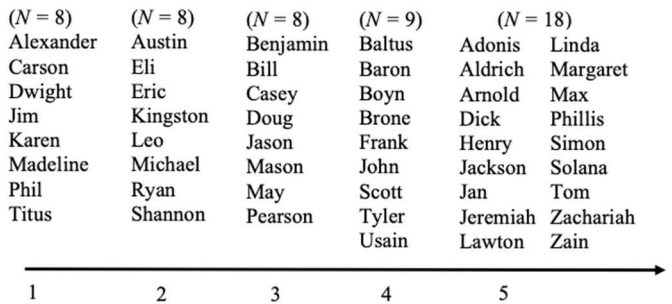


Fig. 1. Farmers grouped by number of RA principles practiced at the time of the interview.

transition (practicing all five RA principles). All the farmers we spoke with had employed at least one, and as Fig. 1 shows, they were nearly evenly distributed across all stages of the RA continuum. These farmers were broadly representative of farmers in the region, as 80 percent were male and all self-identified as white, non-Hispanic. Their farms were larger than average for the state of Kansas (USDA NASS, 2017), ranging from two to 22,000 acres, with an average farm size of 1,888 acres. Sixty-nine percent of these farmers’ operations included both crops and livestock (cattle, swine, sheep), 90 percent were partial or full owners of the land they farmed, about one-half used irrigation and one-half were dryland operators. The farmers were approximately ten years into their transition to RA, on average, with a range of zero (had just started their transition) to 38 years.

4. Findings

4.1. The good farmer acknowledges industrial farming addictions

We found that transitions to RA involve re-constructions of identities through the moralizing processes (Burton et al., 2021:89), where thoughts and actions are judged according to principles regarding right and wrong, good and bad, or desirable and undesirable. Among our interviewees, those who had undertaken steps to implement regenerative principles consistently framed their experiences as being in opposition to the ‘others’ practicing more industrial agriculture; thus, moralizing tended to fall along the continuum bookended by productivist-industrial and alternative-regenerative discursive and cultural categories identified in other contexts (Comito et al., 2013; Kunze, 2017; McGuire et al., 2013; Salamon, 1994; Silvasti, 2003; Stock, 2007; Vancley and Enticott, 2011; Welsh and Rivers, 2011). Because dichotomous analyses can oversimplify and homogenize complex, dynamic meaning-making processes which are the focus here, (Bruce, 2019; Chouinard et al., 2008; Fairweather and Hunt, 2011; Höglind et al., 2021), we treat these continuums simply as heuristics for understanding transitions to RA, while recognizing that symbolic, meaning-making processes are dynamic, negotiated, and situated (Burton et al., 2021:26; Lähdesmäki and Vesala, 2022:428; Sutherland, 2013:439; Sutherland and Darnhofer, 2012:238; van der Ploeg, 1994:18).

Farmers in transition would most frequently contrast their experiences with industrial farmers in terms of addiction and recovery. For example, Lawton (5 p, 4 y)² said transitioning to RA is “... like weaning somebody off of drugs...you’re weaning your soil off of [needing] all those input costs.” Akin to the process of bouncing back after quitting chemical dependence in the human body, Max (5 p, 5 y) likened the process of exiting the industrial-chemical treadmill as “having to recover.” Others made the connection between the body’s chemical dependence on a drug and industrial agriculture’s dependence on synthetic chemicals more explicit. Zain (5 p, 19 y), for example, linked alcohol addiction with the practice of industrial agriculture, saying of the industrial farmers he knew: “Alcohol needs addressed. I see way too much alcohol.” Adonis (5 p, 7 y) stated it most succinctly: “I’m addicted to fertilizer and chemicals.” Boyn, who employed four of the RA principles and started the transition to RA 16 years ago, emphasized that, like dependence on synthetic drugs in the human body, the soil requires time to recover from synthetic chemicals: “Going from the ground that’s completely dependent on synthetics to trying to have Mother Nature do the work? It’s hard. It takes a while.”

Although various factors motivate farmers to begin transitioning to RA, and every story is idiosyncratic in its own way (Canales et al., 2015; Carlisle, 2016; O’Connor, 2020; Vitale et al., 2011), the farmers we spoke with tended to initiate recovery after reaching some kind of a

² Throughout, we identify the number of regenerative principles farmers are using (“p”) and the duration of time in years they have been practicing regenerative agriculture (“y”).

breaking point, financially, socially, mentally, or emotionally (Bryant and Garnham, 2013; Chapman et al., 2022:287; Gosnell, 2021a:3). For example, Boyn (4 p, 16 y) began his recovery because he “... *went through a dark period...I never want to go back to that place.*”

Changing farming practices based in different principles is also an implicit and simultaneous shift in one's identity, as a farmer effectively leaves one social group for another (Burton, 2004). That can include not just friends, but also family. Arnold (5 p, 20 y) describes his father-in-law's decision to take farmland away from him because of his transition to RA:

“My father-in-law...worked the soil eight times: he plowed it, disked it, and field cultivated it over and over...to look perfect. I'd have 15 percent better yields every year with my minimum tillage...and my input costs were significantly less. But all he could hear in his head was the coffee shop crowd bragging about how clean his fields were. I helped my father-in-law the last 20 years of his career. One day I found out that he rented the farm to another guy. Why? Because I was a ‘crazy cover crop, minimum tillage guy.’”

Arnold is effectively describing a transition to a new definition of the ‘good farmer’. The transition can be experienced as a form of identity loss requiring new self-perceptions, statuses, meanings and symbols from new principles and practices. Michael (2 p, 3 y) elucidates the intricate connections between addiction, recovery, and the feeling of social loss from rejecting an identity derived from farming that is in some cases familial:

If you interact with someone who's addicted to a substance of some form, you can go cold turkey but it's not fun for anyone. ... It involves change, which is tough for everyone. In many ways, we're acknowledging that we haven't done it right. And for some of these [multi-generational] farms, you're admitting that your ancestors didn't do it right either.”

Many farmers are motivated to achieve alternative definitions of ‘good farmers’ because of the financial strains associated with industrial agriculture (Sutherland and Darnhofer 2012). For example, John (4 p, 12 y) explains:

“Every farmer I talk to comes from a different angle, whether it's financial, spiritual, emotional, a divorce...Every shape and form of farmers that have went through hell and back have come to this [regenerative movement] because it creates a better life for farmers emotionally and mentally.”

Financially-motivated transitions to RA-definition of a ‘good farmer’ tended to take one of two forms: luxury or necessity (Burton et al., 2021:74,135). Transitions were financially easier for more-advantaged farmers because they could better afford the up-front risks associated with sacrificing yields for cover crops and tended to own more land with which to experiment slowly incorporating RA principles. Baltus (4 p, 12 y) owns 12,000 acres of land and exemplifies this type of transition, remarking, “*I've quit worrying about the cost of the right thing.*” However, many of the farmers we spoke with undertook the transition to RA out of necessity: they could not afford the increasingly high costs associated with industrial agriculture. Jackson (5 p, 10 y) dedicates time helping surrounding farmers who need to transition out of necessity:

“Several farmers in my area almost lost their farms...because they couldn't get a line of credit because they're so highly leveraged, so they felt like they had to use cover crops to change.”

John (4 p, 12 y), using the language of addiction, describes the necessity of regenerative practices:

“I didn't really have any bad addictions [because] I didn't have the money to buy tillage equipment, so I was fortunate to not have that bad habit to get rid of.”

Zain (5 p, 19 y) personified this experience, again using the language of addiction and recovery:

“[My transition] really started because I was broke and I couldn't hide that being a public speaker...I had to stand up in front of the crowd and say, ‘I'm broke.’ I am a recovering conventional farmer.”

Zain expresses the identity tensions at the heart of the transition to RA. He feels morally obligated to transition because he could no longer lie to himself or maintain a “public face” that masked his experiences in industrial agriculture (Comito et al., 2013:283).

Related to financial motivations, another major motivation for transitioning to RA was concern about dependence on chemical inputs and their impact on ecological and human health. The culture of productivism on the industrial production treadmill motivates many farmers to use glyphosate (Roundup) (Dentzman, 2018), but the financial, physical, and environmental costs are raising questions about whether the costs are now larger than the benefits (Lähdesmäki and Vesala, 2022:425; Nouvian et al., 2023). Frank's (4 p, 5 y) experience illustrates the role of chemical dependency as a motivation for transitioning to RA:

“You can walk outside in the morning and smell chemicals...When your eyes are watering and you see the smell that stuff for ten minutes, I can't help but think that it's doing something to you. That's what we're trying to get away from.”

Chemicals had tainted the drinking water so badly in Aldrich's (5 p, 20 y) part of the region that he describes seeing “*no clean water' signs. Nitrate levels were above ten parts per million. You can't even draw a well to drink your own water.*” Doug (3 p, 9 y) was motivated to transition to RA after a ...

“... severe allergic reaction to [neonicotinoids]. So, we voted not to go that route. I would have a metallic taste in my mouth for a month after, and this isn't even handling the stuff, this is simply the smell of it. And I go, ‘You know what? I want to live another 20 or 30 years, I don't want to go down this road!’”

Regardless of the motivations for transitioning to RA, these transitions involved shifting conceptions of the ‘good farmer’ from a purely productivist ideal, who utilizes chemical inputs and industrial methods, to a more post-productivist ideal grounded in values that acknowledge industrial agriculture as a form of addiction and recognize recovery from addiction as a worthy form of farming.

4.2. *Going farther is better for the soil...and can be harder on the farmer*

After the transition to RA is initiated, the work of shifting practices and principles ensues. On average, the farmers in our sample took 1–2 years to adopt and implement up to two of the five RA principles, but it required another six years, on average, before the adoption of three or more RA principles.

Going farther into RA seems to involve additional challenges, key among them financial, as the risks of implementing RA principles accrue nearly immediately but the rewards emerge over a longer time horizon (Deines et al., 2023). For example, biodiversity, soil health renewal, and returns on cover crops—the most popular options of which were rye, sedan millet, winter peas, vetch, and triticale—become more fully realized after three years. Tyler (4 p, 3 y) struggled to plant the right cover crops when he began transitioning:

“We have had 27 acres in a crabgrass and triticale rotation for grazing purposes...for probably three years now. I just didn't get a real good growth on the cover crop mix. I'm learning that crabgrass has some allelopathic properties, even if it has been sprayed and killed, [and] that's limiting some of [triticale's benefits], potentially.”

Indeed, crabgrass has been found to interfere with triticale growth (Pereira et al., 2011), which Tyler learned from experience during the critical first three years of deciding to transition to RA. Adonis (5 p, 7 y),

too, refers to this three-year period when he describes the need for neighboring farmers to work together to help with the transition, saying if neighboring farmers “*got together and collectively said ‘okay, for three years don’t strip, don’t spray’...yields are gonna go down, but we can keep our profitability.*” The transition takes time, and the early years can be the most trying for farmers transitioning to RA: Solana (5 p, 15 y) says, “*[when] chemistry has killed the biology...to redevelop it takes time.*” Jackson (5 p, 10 y) mentions that learning patience is crucial, drawing an explicit comparison between the soil and his own mental orientation in the recovery process:

“My soil wasn’t where I was mentally...[Its health] wasn’t exactly where I wanted to be, even though I knew I could get there. It just takes time. You can’t change your soil in one year, in three years... it’s a slow building process.”

We found that farmers tended to find themselves stuck in the middle of the transition because of the challenges for maintaining their living standards during the transition. Although 87 percent of our farmers agreed that they were “generally profitable,” most also indicated that they were “just making a profit,” and nearly one-half reported “substantial off-farm income” was necessary to support the household. Bill (3 p, 3 y) illustrates a typical sentiment of the time and financial wellbeing needed to transition to RA practices:

“I can’t afford three years of zero income. There’s no way the banker is gonna let me do that. The economics of it is [that] I have to be profitable making money farming now.”

It was in the middle-of-the-transition stage where tensions about the relationship between the ecological benefits and social (human) benefits of RA were sharpest. Max (5 p, 5 y) articulates this tension:

“We’re wrapping up a lot of money in cover seeds that you got to be prepared to eat. Is it great for the soil? Yes. But to dive off into it 100 percent in the beginning is a huge pitfall. [Cover crops] are inflating faster than their value unless you consider the long-term. I buy that the long-term benefits to the soil are unmatched. But if you can’t keep a guy profitable through the short term and he had to sell the farm in the end, what difference does it make?”

Max expands on the issue that farmland owners may not profit from or see the benefit in regenerative practices:

“Landlords will dump you and your neighbor will come outbid you tomorrow. You can find a regenerative landowner that doesn’t care if he breaks even for a couple of years...there are guys out there. But good luck finding them here.”

Bill (3 p, 3 y) too says, “*If I go broke, somebody else will come farm on my ground, and they will farm it however they see fit. Who knows what they’ll do?*” As of 2017, 54 percent of the total operated acres in Kansas were rented, the third highest among all states (Bawa and Callahan, 2021:2). Competition for farmland is keen in the USA, and the pressures of productivism were rife in the stories we heard about the financial risks of transitioning to RA. Even if the farmer is willing to accept the socio-cultural risks of transitioning to RA, the agricultural treadmill looms large, especially in the first three years of the transition, posing material challenges to a one’s burgeoning identity as a post-productivist, regenerative farmer.

4.3. Good farmers learn to see again

Those that make it through the three-year time point seem to be steeled by the process of transition. Their convictions about the ecological benefits and human benefits of RA were deeper, and even more noticeably, these farmers more clearly saw their interrelationships. Indeed, they seemed to think more relationally, seeing much less of a distinction between the health of the ecosystem and the health – financial, emotional, social – of themselves. For instance, Adonis (5 p, 7

y) describes how and why Marestalk (horseweed), which is widely considered an undesirable annual forb, disappeared when he replaced chemical herbicide use with rotational grazing. Adonis draws a direct link between soil health ceasing chemical ‘addiction,’ the improvement of ecosystem health, and the financial health of his farm:

“I met with my accountant. He’s intrigued that I’m doing something different than the other 100 percent of his customers, ...he asks, ‘how did you have such a good year?’ Well, I’m not addicted to this system.”

Solana (5 p, 15 y), too, explains the correspondence between soil health and the farmer’s (financial) health and well-being as “feeding your biology”:

“Money that I put into seed is never wasted, because you’re either feeding your biology directly when they eat the seed, or you are growing in live roots, and that’s what’s going to improve the soil faster than anything else.”

Aldrich (20 y, 5 p) also emphasizes the correspondence between regenerative practices and financial well-being:

“You start building your systems back with regenerative practices and you become profitable...I’ve been in debt, and I’ve got myself out of it.”

Having seen more of the principles at work on their farm for a longer period, farmers’ identities past year three had shifted even more toward an ecological orientation to farming. Bell (2018:72, original emphasis) calls this orientation a “*natural conscience*, a basis for moral thinking we believe to be free of society and all its politics and constant play of interest and ambitions.” The natural conscience is conceptualized as existing “beyond” the social and political – even though it cannot be – and as being a surer “basis for the moral for precisely that reason” (73). The natural conscience emerges from the dynamism between a “natural other” and a “natural me” (72): the natural other is generalized and idealized as “separate and pure, real and true” and “natural me” as our non-corrupted, non-political self (73). The natural “me” imagines the generalized other’s response to us, which simultaneously shapes what our sense of me is to begin with” (73). We heard this consistently in the narratives of our farmers who had passed year three, and farmers who were practicing more of the RA principles.

As price-takers on the agricultural production treadmill, farmers using industrial practices are dependent on chemical inputs manufactured off-farm to maintain operations. The turn to a ‘natural conscience’ form of farming entails a shift in the form of dependence the farmers experience, from dependence on large, multinational seed and chemical firms – external actors – to ecosystem dynamics on farm – internal ‘actors’. Aldrich’s use of the word ‘systems’ is not trivial, but instead indicates an important part of the identity shift in the RA transition: this shift is experienced as a widening of the boundaries of the farmer’s scope of orientation to include the natural, ecological processes within which the farm and farmer exist.

Part of the process of re-working one’s “natural me” to see oneself as part of the broader ecological context is also the ability to re-evaluate one’s relationship with the subsidy-fueled agricultural treadmill. Farmers often positioned RA as a means of countering what they felt was a troubling dependence on direct payments and crop insurance. For example, Ryan (2 p, 3 y) describes his identity as a farmer bluntly, saying industrial agriculture had turned him into a “*government contractor.*” Phil (1 p, 0 y) plainly states the dependence he feels: “*if it wasn’t for government payments, we wouldn’t (have) made anything.*” Baltus (4 p, 12 y) makes the connection between subsidies and industrial practices clear: “*government subsidies [are] propping up bad practices.*” Again, however, RA was often viewed as a means of transitioning away from dependence on subsidies. Here, Lawton (5 p, 4 y) describes:

"If you are determined to stick it out for a couple years, you start to see that 'I don't need the government to tell me what I can and can't grow. I can do this because...[I'm] making money. And that's not in the form of subsidy checks.'"

Along with the effort to become more *independent* of government subsidies is an effort to acknowledge a *different kind of dependence*, one that holds the possibility of renewing the farming operation, and one's identity as a 'good' farmer. Transitions to RA entail principles that encourage an orientation to farming that works *with* ecological processes, not against them. This orientation seemed to be associated with more of an openness in disposition, with more room for questions, more interest in observation, and more comfort with uncertainty than the norms of those in industrial agriculture. Simon (5 p, 3 y) illustrates this disposition:

"I find it exciting to be continually learning new techniques and information all the time. There's so much once you start learning how to work with biology versus just reaching for the chemical solution. I find that endlessly fascinating, challenging, and intellectually stimulating. It changes the relationship you have with your land and the way you see things ... I'm always trying to learn things."

This openness in disposition is a key part of the identity shift entailed in RA transitions. We found it was routinely expressed alongside another key part of shifting identities: the tendency for farmers to see themselves and their work as much more intimately interconnected with complex and adaptive living systems.

Transitioning farmers seemed to produce their identity by comparing themselves to industrial farmers, and to a 'natural' ecosystem that was perceived as beyond the human and social context. Farmers whose identities were more strongly grounded in RA tended to try to express their experiences with the ecological context in more holistic terms, as interconnected systems, often personified as "Mother Nature"—a natural 'other', or reference point, that complemented their othering of industrial farmers, and which served to develop the "natural me" of their changing identities. Farmers transitioning to RA acknowledged their dependence on ecosystems, like many farmers, and even those employing industrial practices. Leo (2 p, 4 y), for example, describes this sense:

"(We farmers) are totally reliant on Mother Nature, so you damn sure better take care of what She sends you, and She's gonna send you a six-inch rain in an hour. Better figure out how to handle it [and] take advantage of it."

However, for farmers transitioning to RA, there was a sense of dependence that went further toward acknowledgement of embeddedness, of being fundamentally dependent upon – and a part of – their ecological contexts. These sentiments were often explained using language from the Christian Bible, which remains a central component of the dominant culture in this region, with many making special reference to the concept of 'dominion' in the Book of Genesis. Mason (3 p, 9 y), for example, describes this sentiment:

"I don't think in terms of dominion, and I don't see nature and soil as things to be conquered, per se...I see us as part of creation as opposed to being separate from it, and not necessarily above it."

In addition, Henry (5 p, 8 y) expresses his "natural me" both in response to the industrial 'other', his family's ways of farming, and the natural other ("*nature*") in terms of the concept of 'dominion':

"I very much view myself as a part of nature, and I want to be...I want to live my life in contrast to the tradition I was raised in where you have dominion over nature, and you fight nature."

Pearson (3 p, 3 y), an industrial farmer for over 30 years, is reprioritizing the good farming symbols he produces as he transitions to RA near his impending retirement (Riley, 2016b). He acknowledges RA

as an ongoing process, one that requires a different view of nature as a partner to work with rather than against: "*there's all these steps to get to where you want to be...you better be working with nature instead of against nature.*"

As the reference point for how to farm, and even how to live, nature was frequently invoked to evaluate 'good' farming, and regenerative agriculture was seen as way to farm in nature's image, or at a minimum, to farm in ways that mimic pre-European settlement in the region. Solana (5 p, 15 y) makes the connection to pre-European settlement clear when she argues for the need to reintroduce livestock into farming, one of the principles of RA: "*(Farmers) need to go back to nature; if you can't have a buffalo on the prairie, then you need to have cattle on the prairie.*" Zain (5 p, 19 y), for example, describes his industrially-farmed operation explicitly as "dead": "*When we moved [to our farm we had] a dead system.*" Contrasted against the industrial approach to farming was Adonis (5 p, 7 y), who again refers to the 'problem' of Marestail when describing an emerging systems perspective of his farm and practices:

"*Mother Nature drops in Marestail. Why is that? She's trying to patch... the symptoms of something we're doing. She's curing it on her own. How do we farm synergistically with Her?*"

Seeing "dead" systems as an outcome of industrial practices coincided with the view that industrial agriculture is also easier, or less complicated, to practice than regenerative practices, which require closer observation of, and adaptation to, ecological processes. Pearson (3 p, 3 y) is fully committed to regenerative agriculture, but has had difficulty learning new practices and finds it hard to shift away from his decades of experience with industrial farming precisely because RA is more 'complex':

"In the old days...[farming] was pretty simple Just 'farm the shit out of it.' Well, now we've added cover crops, [which is] another operation, [and if] we want to run a crimper, that's another operation...regenerative agriculture is much more complex."

The complexity of the practices, and the challenges of implementing RA principles for one's identity, mean that the transitions can be difficult, incomplete, and ongoing. Titus' (1 p, 5 y) disposition, for example, illustrates that at times, the willingness to implement RA practices co-exists with the well-engrained habits of industrial farming. Titus espouses the Mother Nature script more typical of farmers practicing regenerative agriculture, along with a view of humans as part of nature, which also tended to characterize RA farmers: "*[The soil] was here a long time before we were. If you use what Mother Nature has allowed you to have, usually things work out well.*" However, Titus also expresses the continual tension he feels to continue industrial practices, again employing the addiction analogy used by many RA farmers we spoke with:

"If we can ever get his soil health, micronutrients, pH, and everything perfect, I think that stuff works really well. But we've got a lot of drugs. And as of right now, I have really no interest in going 100% because I like to have options."

Still, among those that went deeper into RA, employing more of the principles, over a longer time horizon, conceptions of the 'good farmer' shifted more clearly to an ecologically-oriented, whole-systems perspective that was the basis of a different identity as a farmer. Jeremiah (5 p, 38 y), who had implemented regenerative principles for the longest duration among those we spoke with, describes regenerative agriculture as an altogether different worldview, one that requires a more "holistic" appreciation for farming in the context of living systems:

"*I use a holistic approach to agriculture. You're not looking at...bushels for one crop, [but rather] looking at how all these things fit together in a healthy way. The other approach has been to the detriment...[of the farmer and to] the organisms in the soil ... [Without seeing] at agriculture as a functioning, whole system...we have totally diminished people, the*

soil, and our environment. Farming in a holistic manner can regenerate both the Earth and its inhabitants.”

The shift to RA thus entails a process through which farmers come to see their practices, and themselves, as more intimately connected to the broader communities, or ecologies, of which they are a part. Farmers transitioning to RA are moving away from the productivist culture which valorizes the role of farmers as producers of food to co-producing members of ecological communities. Usain (4 p, 10 y) describes how moving away from his tillage habit allows him to co-create habitats for non-human species: *“I saw deer, pheasants, quail...if I would’ve tilled it, it’d just been a wide-open, vast area. But instead, I created this habitat.”* Pearson (3 p, 3 y) could not wait until the fall when he could seed *“clovers...so we can have a buffet of flowers blooming all the time for the bees.”*

The shifting definitions and boundaries of community in the transition to RA can also include a reinvigoration in the experience of being a member in a community of practice. Zain (5 p, 19 y) describes this sense of community with fellow farmers transitioning to RA, contrasting it with his previous experiences in industrial agriculture:

“In the regen(erative agriculture) circles, [if] you got a problem, they’re all jumping on it with an idea of how to fix it. It’s an open community and they love to talk and share ideas and try to help anybody. So maybe we are kind of getting a little bit of our community sense back and some of our integrity back.”

Many of the farmers far along in the transition regularly attend and lead conferences, field days, and regeneration events to increase awareness, education, and adoption of RA. They try to change the rules of the game – industrial U.S. farm structure – and its self-reinforcing rationale, especially in the U.S. Midwest since the good farmer is geographically dependent (Riley, 2016a).

There is a sense among farmers transitioning to RA that they are seeing again, for the first time, themselves, their work, and the ecosystems which encompasses them. It is a sense of renewed place attachment and a re-grounding of their identity in their place (Leck et al., 2014; McGuire et al., 2015; Stedman, 2002, 2003). Many of the farmers we spoke with contrasted their revitalized orientations to their life and work with others on the conventional-industrial treadmill and their previous lives practicing industrial agriculture. Boyn (4 p, 16 y), for example, expresses sympathy and regret for his neighbor, who continually employs industrial practices:

“[He] just has to kill and control for tidiness. He carries everything with him, everything is so stressful. He doesn’t get enjoyment out of what he does.”

John (4 p, 12 y) describes this transition, drawing explicit comparisons between his orientation prior to transitioning to RA and comparing himself to his peers practicing industrial agriculture:

“Your whole mindset changes. There’s life here and success, [not] the failure that comes with ‘I can’t put food on my family without getting more debt.’ You will treat your family differently. If you interact with [industrial] people every day, you know that they don’t have much of a spring in their step. And then you see the next guy who has incorporated these [RA] things. [You see it in] their eyes, they look excited. They have a spring in their step, and they’re excited about life because there’s hope. All of that translates into how we interact with others...I think our disasters are, in some ways, our best opportunities.”

These experiences provide “tractions”—newfound joy, purpose, integrity, interest, enthusiasm, hope, and life—for further pursuing the RA transformation (Gosnell et al., 2019:7). Jackson (5 p, 10 y) draws sharp contrasts between the addictions of industrial agriculture and his emerging identity derived from RA:

“Before I changed my farm and started caring about my soil and thinking about the soil as an ecosystem, it was a very depressing life.

Every day I’d wake up deciding what I was going to kill next, whether that was a pest or a weed. It was a life revolved around death. But when I completely changed the outlook of my life—when I started trying to grow things and bring life to my farm—it gave me a positive attitude...It’s less draining to work around life instead of death every day.”

Jackson expresses how changing definitions of a ‘good day’ (Sutherland, 2021) using RA principles ultimately rejuvenated not just the soil or the ecosystem but himself, drawing a direct contrast between industrial and RA practices, and a clear connection between the health of ecosystems and his own health and well-being. An emphasis on working with nature—as a part of living, complex, and adaptive systems—is an integral part of the shifting identities of farmers transitioning to RA. The association of ‘life’ with RA practices and ‘death’ with industrial practices was often more implicit than was the case with Jackson, but it was a continual undertone of the narrative contrast between industrial agriculture as addiction and regenerative agriculture as recovery.

5. Discussion and conclusion

Regenerative agriculture is gaining traction amid the accumulating costs of industrial farming for the environment, rural communities, and for farmers themselves. Consulting a process-based RA definition (Newton et al., 2020), we explored how farmers experience the transition to RA in Kansas. Through in-depth interviews, we uncovered emergent, changing meanings of the ‘good farmer’ as farmers incorporate RA principles and practices.

Farmers transitioning to RA set themselves apart from those practicing industrial forms of agriculture. Many adopted a moralized stance where a primary reason for their actions to maintain or rebuild good soil, healthy food, strong families, and communities was that they did *not* want to do the opposite: that is, degrade soil, and undermine health by continuing industrial farming practices, a finding that aligns with Stock’s (2007) study of reflexive and alternative Midwest organic food producers. RA farmers were more inclined to share how their practices harmed them, and they used the discourse of addiction to describe industrial agriculture, seeing RA as a form of recovery from addiction to the chemical-intensive and subsidy-fueled treadmill of production that characterizes industrial agriculture. The farmers we spoke with were becoming more comfortable embracing regenerative practices increasingly promoted in the cultures of farmers and non-farmers alike (Food Insight, 2019:54; Whole Foods Market, 2020). As farmers become more comfortable in their post-productivist identities, new meanings of farming and the ‘good farmer’ emerge to support the new behaviors (Burton 2004:211). Through discursive actions in various “para- or non-agricultural fields” (Sutherland and Darnhofer, 2012:238)—such as agri-business conference rooms, regenerative conferences, auctions, coffee shops, bleachers, etc.—these farmers were working to change the “rules of the game” (Riley and Robertson, 2022:438) by providing symbolic valorization for re-worked definitions of ‘good’ farming to replace industrialization as the cultural convention with regeneration as the norm.

The labels and symbols underlying the heuristic continuums we employed—‘conventional,’ ‘alternative,’ ‘industrial,’ ‘regenerative’—are neither “fixed or generalizable descriptions of real-world farmer types or styles of farming” (Lähdesmäki and Vesala, 2022:428). They are not impermeable dichotomies that determine farming practices (Höglind et al., 2021). Moreover, “changes in farming symbols are neither rapid nor clear cut” (Sutherland and Darnhofer 2012:238). For example, Titus (1 p, 5 y) espoused an environmental ethic while plowing a field not only because he wants “options,” but because he rents the ground from a fully absentee, Oregon-based owner who insists that Titus plow and disk the soil because that is how her father farmed. Titus continued conventional practices because of his rental agreement with

the absentee landowner, but he also expressed that he eventually wanted to change the agreement to become more regenerative because he saw other farmers having success with no-till and cover crops. Of the 22 farmers displaying 1–3 regenerative practices, nine (Eli, Titus, Leo, Austin, Michael, Ryan, Casey, Pearson, and Mason) were open to adopting more regenerative practices in the future to forward an environmental ethic, but only if the practices could prove financially feasible *and* if something about their situation were to change, like arrangements in ownership/family, age, health, environment, etc. In this sense, our findings corroborate that “conventional farming is highly varied and can include cohorts of environmentally oriented producers” (Sutherland, 2013:439). Labels like ‘transitioning’ or ‘conventional’ hold heuristic value, but they alone cannot characterize the complexities of farming, farm life, and the attitudes, values, and behaviors of each individual farmer.

‘Learning to see again’ typically involved the transitioning farmer making comparisons with other farmers in their networks, understanding why/how their practices worked (or did not), and then trying out some for themselves to see if they worked for their own farm. In this sense, farmers were more reflexive about the act of farming and open to change than farmers who employed fewer principles. These farmers would be within Höglind et al.’s (2021:7) “high chemical input and conservation or ecological farming with mixed grassland management,” profile but would better fit within Lähdesmäki and Vesala’s (2022:421) “open-minded and rational conventional farmer” type. Like the farmers in Lähdesmäki and Vesala’s (2022), nine farmers in our study were clearly open to learning more information about regenerative practices but would only consider their long-term adoption if they achieved farmer-first aims on *their* timeframes and in *their* operation. These nine farmers displayed a range of ‘good farmer’ valuations, though they were mostly constructed with production-based symbols, just like Sutherland’s (2013:435) “pragmatic organic farmers,” or conventional English farmers who saw the financial stability of organic farmers and were thus persuaded to change some of their practices. On the other hand, our early-stage transitioning farmers treated organic and regenerative agriculture as related, yet ultimately distinct paradigms, or models, and organic and regenerative are distinct in practice in this region: farmers can be certified organic without integrating livestock, maximizing diversity, or eliminating tillage (Charles, 2021; Gruver and Wander, 2009). It was also apparent that these nine farmers tended to be older and were less inclined to value RA practices because they were either or both more committed to conventional practices or did not have as much desire, time, or practical knowledge to change management practices (e.g. Pearson), which supports Höglind et al.’s (2021) finding that age was a greater predictor of Swedish farmers’ overall farming profile than the conventional category (along with farm income and geographic region). Our pragmatic, open-minded, rational, yet conventional farmers could clearly see the well-worn paths to become good, profitable, and environmentally-conscious farmers (Page and Witt, 2022:13), but regenerative transitions tended to remain more uncertain or unclear when viewed through conventionally-prescriptive productivist lenses.

Farmers’ valuations of ‘good farming’ entail multiple agency-structure tensions and contradictions. On the one hand, farmers are active agents who (re)produce fluid, flexible, and evaluative farming symbols (Burton et al., 2021:26; Lähdesmäki and Vesala, 2022:428). On the other hand, larger structural political-economic actors shape products that are visibly appealing, and persuasive in their messaging, to farmers who sport productivist lenses. For instance, although it was Michael’s (2 p, 3 y) goal to someday quit his day job, he remained a salesman of conventional chemicals. He did this to be able to someday afford more RA practices for his own farm, because RA production alone was not sufficient to pay his family’s bills. For example, he recalled that the multinational BASF corporation sent him a pamphlet to advertise a new biofungicide, which means “to kill with biology, not chemistry,” but the product still kills the living insects and plants in agri-ecological systems, a function directly antithetical to the ‘maximize diversity’ RA

principle. Biofungicides had some appeal especially for farmers earlier in the transition who were still seeing through productivist lenses perhaps because they offer a way to claim ‘good’ farming that is environmentally conscious, but in a way that still values the symbols and materials of more productivist-type paradigms.

Along these lines, it is crucial to recognize that large, multinational agri-food firms make and market products to keep up with evolving cultural conceptualizations of good farming, yet these products still subordinate holistic, alternative models of ‘good farming’ (Carolan, 2022:25–45; van der Ploeg, 2022:164). As these powerful actors—General Mills, Cargill, Bayer-Monsanto, BASF—increasingly fund and support programs and policies that encourage RA, process-based definitions will need to be balanced with outcome-based definitions, quantitative measurements, and third-party verifications to mitigate the extent to which these actors coopt the RA movement for their own financial benefit (Fenster et al., 2021, 2021, 2021; LaCanne and Lundgren, 2018; Lundgren, 2021; Savory Institute, 2023). By promoting verifiable, outcome-based definitions in policy negotiations, RA advocates can help reduce the likelihood that RA succumbs to principle drift or experience gaps in enforcement, issues that occurred as ‘organic’ agriculture scaled and became more widely adopted (Beste, 2019; Gibbons, 2020).

Despite decades of alternative agriculture discourses, only 7.5% of farms in the 2017 census planted cover crops, accounting for 3.9% of U.S. cropland (USDA SARE et al., 2023:9). Cover crops alone can maximize soil cover, biodiversity, and the presence of living roots in the soil, which together total more than half of the generally agreed-upon soil health principles (USDA NRCS, 2021). There are several established and emerging federal government programs and policies to help scale RA by offering more protection for farmers wanting to grow cover crops. In addition to already-established USDA-NRCS Conservation Stewardship (CSP) and Environmental Quality Incentives Programs (EQIP), the COVER Act (2018) (currently stalled in committee) would offer a \$5 per acre discount for crop insurance premiums for producers who utilize cover crop systems, develop a soil health pilot program to investigate soil health practices, and provide technical assistance and outreach to producers on cover crop implementation (Mulugeta, 2023). These types of programs especially appeal to pragmatic, open-minded, and rational conventional farmers (Sutherland 2013). The Growing Climate Solutions Act (2021), which passed the U.S. Senate but stalled in the House, would establish a voluntary greenhouse gas technical assistance provider and third-party verifier certification program to help reduce entry barriers into voluntary environmental credit markets for farmers, ranchers, and private forest landowners. Moreover, the Biden administration committed \$22 billion to “regenerative or climate-smart” practices (Qiu, 2022:1). These and other policy initiatives may offer greater protection, but they do not radically change the overall farm structure, productivist culture, or the production treadmill it promotes.

Nevertheless, new meanings of the ‘good farmer’ developed along with recognition of the addictive features of industrial agriculture, which include most prominently dependence on chemical inputs government subsidies. Addiction is a conceptual analogy, or metaphor (Lakoff and Johnson, 2003), connoting both the power of the agricultural production treadmill and farmers’ acknowledgement of their relative powerlessness. Metaphors collapse the distance between spaces of meaning (Frye, 1990:7), more clearly uniting for its users their lived, embodied, and material realities with their respective cultural and symbolic representations. Recovering farmers saw a more direct relationship between the health of their soils and their own health, which extends the idea that by regenerating their soils (material-symbolic), farmers can regenerate their souls (symbolic-material) (Gosnell, 2021a, 2021b; VanWinkle and Friedman, 2017).

‘Good,’ recovering farmers felt they could improve the baseline wellbeing of their agri-ecosystem, community, and themselves. The events that trigger the transition to RA were as idiosyncratic as the farmers themselves, but common among their narratives was a

recognition of the addictive features of industrial practices, which were seen as harmful to the ecosystem, their farm, and their sense of well-being.

In this sense, regenerative agriculture was experienced as a process of recovery. As [Burton and Wilson \(2006:110\)](#) also found, the process of recovery was not linear nor sequential, proceeding in an orderly set of stages from fully-industrial to completely-regenerative. Recovery did not always begin with acknowledgement of addiction, nor was there a singular, formal acknowledgement of addiction, followed by recovery. Instead, we heard about recovery as a cycle, with incremental steps forward toward new practices and new senses of self, and steps back toward the conventional practices and established identities. Just as [Burton et al. \(2021:117\)](#) found, these transitions are an ongoing (re) negotiation – a struggle – within the farmer and between well-engrained habits inscribed by industrial farming and emerging patterns of thought and action prescribed by RA principles and practices. For this reason, there was no singular form of transition to RA. Our analysis identified the general contours of what it is like to attempt the transition to RA but there were only processes (plural) of transition, or multifunctional *transitions* to RA (223).

Although there reasons for transitioning were varied, and their experiences in RA varied widely, good farmers still exhibited broadly consistent narratives and themes ([Lähdesmäki and Vesala, 2022:431](#)). Most clearly, transitions were consistently expressed as the experience of seeing again. Farmers described the transition to RA as a nearly complete change in perspective, or worldview altogether. Using the language of addiction, recovery meant not only acknowledging addiction, but seeing the ecological and social context of farming more clearly. Employing RA principles meant that it was necessary to think more holistically about farming ([Gosnell et al., 2020](#)). It meant seeing the farm *in context*, as a system, or assemblage ([Forney et al., 2018](#)): an interconnected set of relationships between soil, water, animals, and ultimately people, in communities. This lens, reoriented away from economic productivity toward regenerative stewardship, can expand the scope of ethical responsibility beyond human relationships to ecological ones ([Stock, 2007:96](#)).

This type of change can be very challenging to one's sense of self precisely because it involves such comprehensive shifts in one's sense of identity. The ability to see differently entailed a certain acceptance of uncertainty, an openness to change that could be challenging for those accustomed to the conventions of the industrial production treadmill. Although detrimental, conventions are comfortable, established, and routinized patterns that stabilized one's identity. Eschewing conventions may require cultivating "unknowledge," or identifying these conventions and their underlying social relations as mistaken, untrue, unimportant, and ignorable ([Bell, 2004:138](#)). Recovering farmers expressed that transitioning was the right thing to do, for their communities, soils, and for themselves. By developing a natural conscience "unpolluted by humanity's attempts to manipulate the truth," recovering farmers discovered "a realm of self that, finally, they can trust" (158).

Farmers seemed to encounter the most unsettling parts of their transitions to RA within three years into the process, a finding that has been identified in other contexts ([Gosnell, 2021b:610](#); [Lujan Soto et al., 2021](#); [USDA SARE et al., 2023:3](#)). There is a real need to investigate transitions to RA in different contexts to better understand the barriers to these transitions. Future research focusing on understanding transitions to RA should be attuned to the possibility of 'year three threshold', a point in the transition which is associated with higher rates of attrition among farmers transitioning. This threshold may not uniformly occur in year three in all contexts, but future research exploring transitions should be aware that risks of transitions could be unevenly distributed in time.

Our study focused on farmers in Kansas. We do not pretend that our study has yielded a thorough, comprehensive understanding of transitions to regenerative agriculture. These transitions are shaped in important ways by the contexts and cultures of farming. Because of their

context-dependent and individually-specific variations, and the time spans over which these processes play out, studies employing longer-term, even longitudinal research designs, would be exceptionally helpful for more rigorous, nuanced understandings of these transitions. These types of studies would also be helpful for developing policies to help mitigate farmer attrition during transitions, and thus, facilitating culture change in agriculture.

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Ethics in research

This research complies with all requirements for ethical research with human subjects, including informed consent, as reviewed and approved by the Institutional Review Board at Kansas State University.

Author declaration

We wish to confirm that there are no known conflicts of interest associated with this publication. We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us. We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing we confirm that we have followed the regulations of our institutions concerning intellectual property. We further confirm that the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

We understand that the Corresponding Author is the sole contact for the Editorial process (including Editorial Manager and direct communications with the office) and is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs. We confirm that we have provided a current, correct email address (tree11@ksu.edu) which is accessible by the Corresponding Author. Signed by all authors on September 7, 2023 as follows:

CRediT authorship contribution statement

Jacob A. Miller-Klugesherz: Conceptualization, Methodology, Software, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Resources, Visualization. **Matthew R. Sanderson:** Conceptualization, Methodology, Formal analysis, Resources, Writing – original draft, Writing – review & editing, Supervision, Project administration, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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