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In the Mindset of Opportunity: Proactive Mindset, Perceived Opportunities, and Role Attitudes

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Abstract

Perceiving roles as fulfilling goals offers motivational benefits to students, and yet the features of individuals or contexts that align with seeing such role opportunities have not been studied systematically. The current research investigated how these goal affordances are related to proactive mindset, or a person's belief that they can shape their contexts. Three studies examined how variation in proactivity aligns with perceiving more communal and agentic goal opportunities in roles. Study 1 found that highly proactive college students (vs. less proactive students) tended to perceive their future careers as fulfilling communal and agentic goals, which predicted positive career attitudes. Study 2 replicated this association, while ruling out behavioral flexibility as accounting for the proactivity-positivity relationship. Study 3 experimentally tested whether growth-oriented contexts foster proactivity. Proactive mindset aligns with more expansive views of roles as fulfilling fundamental motives. These views, in turn, carry positive implications for one's future career attitudes.

Key words: proactive mindset; motivation; affordances; role attitudes; social roles

In the Mindset of Opportunity: Proactive Mindset, Perceived Opportunities, and Role Attitudes

In any context, two people might perceive their surroundings and their possibilities for action quite differently. For example, two first-year physics majors might experience similar student roles in many respects: They take the same courses and engage in similar activities. Even so, they may perceive their opportunities differently. These perceived opportunities have documented consequences: Individuals who perceive their roles as fulfilling valued goals express greater role interest and motivation (Allen et al., 2018; Thoman et al., 2017), anticipate better performance in the role (Belanger et al., 2017), and anticipate greater belonging in the role (Belanger et al., 2020). With evidence of these benefits in hand, the question then turns to understanding more about the origins and correlates of affordance beliefs. As we review below, perceived affordances can be shaped through direct observation of what the role *is*: What do people in this role do? Yet we propose that another set of relevant cognitions might involve not only beliefs about what *is*, but with beliefs about what *might be*. Might this role be enacted in such a way to meet valued goals?

As we review below, substantial evidence shows that direct information about role activities influences perceptions of what goals can be fulfilled in a role (see Figure 1). Yet, indirect routes to perceiving a wide range of goal opportunities are less examined. The current research examines whether certain individuals or contexts hold a sense that roles can be enacted in different ways to fulfill fundamental motives. It is these associations that we investigate in the current research. In particular, we examine how affordance beliefs vary with *proactivity* (Bateman & Crant, 1993), or the sense that one can mold the environment to their needs.

Figure 1. Potential sources of affordance beliefs

This research investigates how contexts and individuals vary in proactivity and in turn with affordances (i.e., beliefs that roles can fulfill valued goals). Essentially, a proactive orientation reflects the capacities to perceive and act on the world not only as it is, but as it could be. For instance, individual differences in employee proactivity predict creativity in work settings, and this creativity in turn predicts job satisfaction (Kim et al., 2009). Such proactivity might be fostered in contexts that promote development, such as growth-oriented contexts, as we explore below.

Why Perceived Affordances Matter: A Goal Congruity Perspective

Individuals move toward social roles that they see as affording their fundamental motives (Diekmann et al., 2017, 2020). The most frequently invoked fundamental motives are the dimensions of *agency* and *communality* (Bakan, 1966; Fiske, 2003; Judd et al., 2005): Agency motives reflect needs for independence, competition, and achievement, whereas communality motives reflect needs for connection, altruism, and collaboration.

For example, science, technology, engineering, and math (STEM) fields are commonly perceived to lack other-oriented opportunities, and given these perceptions, communally-oriented people express

less interest in STEM (Diekmann, Brown, et al., 2010). Yet goal affordance perceptions are mutable: Highlighting opportunities to meet communal goals (e.g., helping others) results in students expressing more positivity toward entering STEM careers (Belanger et al., 2017; Diekmann et al., 2011; see Schneider et al., 2016, for similar finding for political career interest). Naturalistic variation also occurs: Biomedical students' perceptions of social-collaborative opportunity in science shift over time and predict their interest in continuing in science (Allen et al., 2018).

Direct Sources of Affordance Beliefs: Information about Role Activities

One source of affordance beliefs is direct information about role activities, including what people in the role do. Evidence for such direct sources comes from experimental studies that manipulate role descriptions to include different kinds of activities. For example, participants randomly assigned to read about a scientist whose work includes collaborative activity or prosocial purpose report that science careers afford more communal goals (Diekmann et al., 2011; Norman et al., 2021). Descriptions of scientific research that include altruistic benefits also increased perceived communal affordances, and in turn, student motivation (Brown, Smith, et al., 2015). Students who read about an engineering course that included a service-learning component, where community service is directly integrated into the course (versus one that did not), anticipated greater opportunity to fulfill communal goals and reported greater likelihood of taking the course (Study 2; Belanger et al., 2017). When perceivers see that STEM roles involve collaboration or altruism, their beliefs encompass a broad array of goal fulfillment opportunities.

Other Potential Sources of Affordance Beliefs: Perceiving Possibility

A less investigated possibility is that a broader array of goal affordance beliefs might be associated with individual or situational tendencies to see roles more expansively. Understanding how individuals vary in their sense that roles can be shifted, and how this perception aligns with varying affordance beliefs, can contribute to understanding how individuals navigate the social structure. Even

among individuals with similar cultural background or levels of STEM experience, individuals report a range of perceptions of goal opportunities within a career field. For example, students vary widely in perceiving STEM careers as fulfilling communal goals (Brown, Thoman, et al., 2015). Because affordances are a mental representation of the outer world, they might be rooted both in aspects of the social role (e.g., affordances in a physics classroom may differ from those in a social work classroom), as well as in properties of the individual perceiver (e.g., two physics majors may differ in their perceived affordances). Considering variation in proactivity can provide insight into this within-person variability in perceptions of affordances.

This research investigates how proactivity – perceiving the possibility to enact change to one’s environment – relates to perceived opportunities within the social structure. There is reason to expect that proactivity will be related to either or both agentic and communal affordances. Agentic affordances might be especially pronounced among proactive individuals because proactivity is defined as the sense that one can enact change (Bateman & Crant, 1993; Seibert et al., 1999). A sense of the self as a proactive agent likely corresponds to seeing agentic opportunities in one’s roles (i.e., heightened agentic affordances). Communal affordances might be especially pronounced among proactive individuals because proactivity may involve with seeing opportunities where others typically do not. Even in the achievement-oriented contexts of college, highly proactive individuals might see heightened communal affordances in their roles. Overall, the tendency to be proactive might be associated with perceiving a broader range of opportunities, both communal and agentic.

Individual and Contextual Differences in Proactivity

Individual Differences in Proactivity

Individuals vary in their sense that they can enact change to their surroundings: Proactive mindset encapsulates a belief that one can effect environmental change despite situational constraints (Bateman & Crant, 1993). For example, an individual with a proactive mindset might innovate their role

or challenge the status quo to ensure their goals are met (Crant, 2000). This construct thus can illuminate how people construe the social structure: A hallmark of proactive mindset is the sense that one can engage in one's role in innovative and flexible ways. Proactivity is associated with an entrepreneurial orientation, or belief that one can pursue opportunities across organizational boundaries (Fuller & Marler, 2009). Proactive orientation also relates to self-reports of flexibility in role behaviors: Proactive employees engage more in specific tasks that broaden job scope and exert more control over the ways their roles are carried out (Fuller & Marler, 2009; Parker et al., 1997, 2006). For example, proactive office employees might enact behavioral role flexibility by taking responsibility for tasks outside of defined job descriptions (e.g., ensuring work unfinished by others is completed on time; Parker et al., 2006) or working to acquire a wide range of skills and knowledge (e.g., participating in voluntary professional development seminars; Parker et al., 1997).

Proactivity is related to but distinct from other personality constructs. Although proactivity is positively associated with four of the Big Five factors (openness to experience, conscientiousness, extraversion, neuroticism; Fuller & Marler, 2009), the effects of proactivity cannot be reduced to the Big Five (Bateman & Crant, 1993; Fuller & Marler, 2009). Likewise, proactivity differs from other dispositional factors such as optimism (Tolentino et al., 2014) and locus of control (Bateman & Crant, 1993; Fuller & Marler, 2009). Thus, relative to other personality constructs, proactive mindset offers a unique understanding of how people tend to navigate their social roles.

The focus on perceptions of roles lends some advantages to considering individual differences in proactive mindset compared to individual differences in growth vs. fixed mindset. Most notably, both proactivity and growth mindsets share a common element of incorporating change, but these two constructs differ in the inclusion of the environment as a target of that change. Proactivity targets changing the environment to suit one's own needs and goals (Bateman & Crant, 1993), whereas growth mindset focuses on potential for the self to develop (Dweck, 1999, 2006). Because the focus of this

research is on beliefs and attitudes about roles, we considered proactive mindset as the individual-difference variable most relevant to capturing perceived capacity to change the environment. Yet, the question of what contexts promote proactivity is also relevant. Here, we drew on the literature about organizational mindset (organizational contexts that promote growth or fixed mindset; Murphy & Dweck, 2010), as we examine next.

Do Growth-Oriented Contexts Foster Proactivity?

Proactivity may be fostered in contexts perceived as promoting a range of possibilities. A growth-oriented context is one characterized by beliefs that ability can be developed over time, whereas a fixed-oriented context is one characterized by beliefs that ability is unchangeable (Murphy & Dweck, 2010). When leaders in a particular context are seen as promoting growth, perceivers may infer that many opportunities exist within a role.

The signaling of multiple possibilities in growth contexts has been documented in educational and occupational settings. For example, students who were randomly assigned to consider classes with faculty who expressed growth mindset (vs. fixed mindset) perceived both communal and agentic goal opportunities in STEM courses and careers (Fuesting et al., 2019). Further, the sense that one can engage in a range of innovative behaviors may be facilitated by growth-oriented contexts because they foster trust. When participants were randomly assigned to read growth-oriented (vs. fixed) mission statements, they perceived cultural norms characterized by integrity, innovation, and collaboration in the company culture (Canning et al., 2020). This accumulating evidence suggests that growth contexts highlight a range of goal opportunities in a role. In the current research, we seek to understand whether growth contexts foster proactivity, and this proactivity in turn is associated with broader ranges of perceived opportunities.

Current Research

Across three studies, we investigated how proactive mindset relates to role perceptions and attitudes toward future roles. The grounding of this research in goal congruity theory led us to start from the established effect of perceived affordances on role attitudes (e.g., Allen et al., 2018; Diekmann et al., 2011; Schneider et al., 2016), and then to ask how individual differences or contextual differences in proactivity might align with perceived variation in affordances. For this initial investigation, we focus on documenting whether individual variation in proactivity is associated with variation in goal affordances, and in turn, with role attitudes. Although not investigated here, we fully anticipate that relationships among proactivity, role experience, and affordance beliefs are reciprocal over time. For example, it is likely that individuals who experience roles with a wide range of activities perceive higher affordances, and in turn learn to see themselves as proactive.

In the current research, Studies 1 and 2 document associations between proactivity and affordance beliefs. Study 1 investigated whether college students who were high or low in proactivity tended to differentially see their future careers as fulfilling communal and agentic goals. Study 2 replicated the association between proactivity and affordances, while also testing whether anticipated behavioral flexibility in the role can account for this relationship. Finally, Study 3 examined a contextual basis of proactivity: Here, we employed experimental methods to test whether individuals randomly assigned to recall growth- vs. fixed-oriented contexts reported greater proactivity and greater affordance beliefs. Data for all studies are available at

https://osf.io/534db/?view_only=1f9e4b4f22b54b009c62932103ceb3f5.

Study 1

Study 1 tested the association between individual differences in proactive mindset and role cognitions with college students at two time points. We investigated whether proactivity is related to perceiving heightened opportunities for agency, for communality, or for both motives. Finally, we

examined whether these individual differences relate to perceived affordances and, in turn, to career attitudes, given prior experimental evidence demonstrating that causal link (e.g., Diekmann et al., 2011).

To date, little research has examined proactive orientation within student populations. Indeed, most research has been conducted with samples of employed college graduates or MBA students with prior work experience (Bateman & Crant, 1993; Fuller & Marler, 2009; Parker et al., 1997; Parker & Sprigg, 1999; Seibert et al., 1999). Understanding any benefits associated with proactive mindset among college students is important for two reasons. Developmentally, college students hold less crystallized attitudes than older adults (Sears, 1986), and young adulthood is marked by exploration of different occupational pathways. As such, proactive mindsets might be especially important for college students' satisfaction with their majors or commitment to a particular career path. Further, the impact of proactivity at the college stage can initiate cumulating effects for career trajectories, given that decisions or habits initiated in college set the stage for future opportunities. Small shifts in perception or behavior early in a developmental process can yield large differences in outcomes if early shifts set into motion cumulating processes (Yeager & Walton, 2011). The role of college student is inherently one that is in service of a different future role. College students' own sense that they can shape their environments to fulfill valued goals can especially matter in achieving that reality precisely because those future roles are not yet set.

Method

Participants. The sample consisted of 146 undergraduate students (82 women, 62 men, 2 not reported; Age: $M = 19.31$, $SD = 2.16$) from a midsize Midwestern university who participated in exchange for payment or partial fulfillment of a course requirement and who completed measures at both time points. An additional 88 respondents completed measures at Time 1 but did not respond at Time 2 (63.7% response rate) and were not included in analyses. Respondents who did not participate at Time 2 reported a lower GPA ($M = 3.23$, $SD = 0.63$) than continuing participants ($M = 3.40$, $SD = 0.42$),

$t(114.15) = -2.10, p = .04, d = 0.31$; no other differences emerged on any variables of interest, $ps > .16$.

The sample included 122 participants identifying as European American, 8 as Asian American, 3 as African American, 3 as Hispanic American, 9 as other, and 1 not reported.

Most of the sample ($n=145$) reported a specific major, with the other participant reporting undecided, and the majority ($n=126$) reported STEM majors of natural science, engineering, computing/technology fields, or mathematics. The remaining participants ($n=19$) reported majors in business, social sciences, education, or fine arts. Additionally, 138 participants reported a specific career intention (94.5%) and 8 had not decided on a career (5.5%).¹

Sensitivity analyses showed sufficient power (0.80; $\alpha=.05$) to detect small-to-medium sized regression coefficients in all analyses ($f^2 = 0.05$ for models with two to five predictors; Faul et al., 2007, 2009).

Procedure. Online survey data were collected at two points approximately one year apart as part of a larger data collection. Only measures relevant to current hypotheses are reported here; other measures and results are available from the authors. All hypotheses and analyses presented here are new; analyses testing different hypotheses that employed other measures and/or subsamples have been published previously (Belanger et al., 2020; Diekman et al., 2020). Participants were recruited either from an email invitation delivered to introductory STEM courses or an advertisement in the psychology participant pool. For all potential participants, the recruitment message called for STEM majors to take part in a longitudinal examination of perceptions about whether certain careers fulfill valued goals.

After granting informed consent, participants responded to the measures described below and were debriefed. Participants were compensated with a \$10 gift card or partial course credit. Participants

¹ Results remain the same when participants who were undecided on their major or career are excluded from analyses.

from the first phase of the study (Time 1) were e-mailed approximately one year after their initial participation to participate in the second phase of the study (Time 2). The recruitment message was identical to the Time 1 message. After granting informed consent, participants responded to the measures described below as part of a larger battery of questionnaires. Participants who responded to Time 2 were compensated with a \$15 gift card.

Measures.

Proactive mindset. Participants completed the short version of the proactive personality scale (Seibert et al., 1999). They rated their agreement on scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) for each of 10 items (i.e., *I am constantly on the lookout for new ways to improve my life; Wherever I have been, I have been a powerful force for constructive change; Nothing is more exciting than seeing my ideas turn into reality; If I see something I don't like, I fix it; No matter what the odds, if I believe in something I will make it happen; I love being a champion for my ideas, even against others' opposition; I excel at identifying opportunities; I am always looking for better ways to do things; If I believe in an idea, no obstacle will prevent me from making it happen; I can spot a good opportunity long before others can*). These items showed high internal consistency and a proactive mindset index was created by averaging across items within each time point (Time 1, $\alpha = 0.89$; Time 2, $\alpha = 0.92$; all reported alphas are Cronbach's α).

Career affordances. Participants rated how much they perceived their future careers to offer opportunities to meet communal and agentic goals. Participants responded to several items beginning with the statement, "In your future career, will you be able to. . ." Participants considered several different goals (Steinberg & Diekmann, 2018). The items consisted of 8 communal affordances (*providing direct help to others; helping society; improving the lives of others through direct contact; improving the lives of others through innovation; working face-to-face with others; participating in the broader professional community; directly mentoring others; and serving as a role model in the community* (Time

1, $\alpha = 0.84$; Time 2, $\alpha = 0.88$) intermixed with 3 agentic affordances (*gaining power; achieving; and being independent*; Time 1, $\alpha = 0.50$; Time 2, $\alpha = 0.65$).² Participants rated each opportunity from 1 (*Not at All*) to 7 (*Extremely*). Items were averaged to form indices of communal and agentic affordances.

Career attitudes. Participants rated their agreement with two items on scales from 1 (*Not at all*) to 7 (*Extremely*): “I will enjoy my future career” and “How sure are you that this will be your future career?” Items were averaged [Time 1, $r(139) = 0.39$; Time 2, $r(136) = 0.59$].³

Results

To investigate the primary question of whether individual differences in proactivity are associated with perceptions of affordances, we examine correlations between proactivity and affordance measures. As a robustness check, we investigate correlations at two time points (early in college and one year later). We then employ mediational analyses to examine whether individual differences in proactivity relate to perceiving both agentic and communal affordances, which in turn relate to career attitudes. Although this analysis does not provide causal evidence for this relationship, it allows us to understand whether both types of affordances are plausible mediators of a potential proactivity-career positivity relationship.

Initial analyses tested for participant gender effects but did not find moderation by or main effects of gender. Further, when we controlled for gender in analyses, results remained significant and of equivalent magnitude (see SOM for analyses with gender). Thus, gender was omitted from analyses.

Individual differences in proactivity are associated with perceived career affordances. As expected, more proactive individuals saw greater goal opportunities in their careers, and these heightened opportunities emerged for both agentic goals and communal goals (see Table 1). Further, these positive

² Although the alpha for agentic affordances is low, similar patterns emerged when items were examined separately. We retained the index for simplicity of reporting.

³ Similar patterns emerged when items were examined separately. We retained the index for simplicity of reporting.

relationships are robust across time: Students both early in their college trajectory and one year later show similar magnitude relationships. The correlations at Time 1 and Time 2 did not significantly differ for communal affordances ($Z = -0.92, p = .36$) or agentic affordances ($Z = -0.78, p = .44$). Thus, individuals with a more proactive mindset tended to see their future careers as affording both communal and agentic goals.

Table 1. Zero-Order Correlations: Study 1

	Time 1		Time 2	
	Communal affordances	Agentic affordances	Communal affordances	Agentic affordances
Proactive mindset	.25**	.46***	.35***	.53***
Communal affordances	—	.30***	—	.52***
Agentic affordances		—		—

Note. $N = 146$. * $p < .05$, ** $p < .01$, *** $p < .001$

Proactivity, perceived goal affordances, and career attitudes. We then employed path analysis to investigate the plausibility of relationships in which individual differences in proactivity are associated with perceiving both communal and agentic affordances and whether these perceptions were, in turn, associated with more positive career attitudes. We note that as with mediational analyses generally, this analysis makes several assumptions (see Rohrer & Hünermund, 2021). We specifically provide information with regard to three assumptions: linearity of relationships, interactive effects of predictor and mediators, and other causal influences. First, to investigate whether this analysis violated assumptions of linearity, we examined plots of the residuals versus predicted values. This examination provided support for linear relationships in this model. Second, moderation analyses did not find significant interactions between proactivity and affordances (all $ps > .08$). Third, inferring causality from this analysis is not possible because a causal interpretation of the mediational analysis would assume

the successful measurement of and control for all common causes of perceived affordances and career attitudes. We cannot rule out other variables that would play a causal role in shaping affordances and attitudes, and indeed the goal congruity perspective views these as important to investigate (see Diekman et al., 2017, 2020). We thus interpret the mediational analysis as providing information about *plausible* causal sequences, which is worthwhile in understanding how individual differences in proactivity relate to the known affordance-attitude relationship.

We tested a parallel path model, controlling for Time 1 career attitudes (Hayes PROCESS macro model 4; 10,000 bootstrapped samples; Figure 2). This analysis highlights the unique pathways of communal and agentic affordances: Early college proactivity was associated with perceiving greater opportunities for both communion and agency in future careers. Consistent with prior experimental and correlational evidence, both communal and agentic affordances were positively related to positive career attitudes, although the indirect effect was significant only for agentic affordances. These mediational analyses are consistent with a model in which early proactive mindset fosters a beneficial set of cognitions. Controlling for Time 1 attitudes, individuals who are more proactively oriented early in college see heightened career opportunities for both communal and agentic goals later in college.

Figure 2. Proactivity, goal affordances, and career attitudes.

Note. Model controls for Time 1 Career Attitudes. The figure presents unstandardized beta coefficients.

[†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

This initial evidence documents that individual differences in proactivity were positively associated with beliefs that one's career would fulfill fundamental motives. Proactive individuals do not simply have greater perceptions of agentic opportunity or greater perceptions of communal opportunity, but a more expansive view of roles that includes both. Further, these positive associations appear to be robust at different points in the college trajectory. Notably, this study illustrates these proactive tendencies among college students, rather than employees. Understanding how individual differences in students' proactive mindset relate to their perceptions of their future roles provides insight into the psychological processes at play as students navigate the social structure.

Study 2

Study 2 investigated whether the role cognitions associated with proactivity can be explained by a general tendency to enact one's roles flexibly, rather than through involving perceived opportunities to fulfill motives. Is it that more proactive individuals perceive latitude to behave flexibly in their roles, and this perceived behavioral flexibility is associated with more positive attitudes?

The logic for examining anticipated behavioral flexibility draws from reasoning that this process might be parallel to the benefits of cognitive flexibility (Martin & Anderson, 1998; Martin & Rubin, 1995), which includes awareness of multiple options available across situations and a willingness to adapt. The goal congruity perspective diverges from this reasoning by emphasizing that the perceptions of multiple options matter especially if those options evoke intrinsic interest (e.g., Harackiewicz & Sansone, 1991); in other words, motivation is key. We thus hypothesize that greater role positivity aligns with the perceived ability to fulfill fundamental motives, and not merely from perceiving latitude to

engage in a variety of tasks (i.e., behavioral flexibility). For example, a highly proactive student might seek out opportunities to engage in community outreach about their scientific research. This task could include a wider range of behaviors (e.g., speaking to the public, organizing, scheduling) than is typically included in a student role. Yet, according to goal congruity theory, such behavioral flexibility will not contribute additional motivational benefits unless the wider version of the role is construed as fulfilling fundamental motives. In this example, community outreach might be construed as fulfilling goals for science to have altruistic impact, and that heightened communal affordance would be predicted to foster positivity toward a scientific career. To test this alternative directly, we examined whether positive career attitudes are more strongly associated with behavioral flexibility or with perceptions that the role will afford fundamental motives.

Method

Participants. The sample consisted of 152 undergraduate students (110 women, 40 men, 1 transgender male, 1 not reported; Age: $M=19.42$, $SD=1.24$) from a large Midwestern university who participated in exchange for payment or partial fulfillment of a course requirement. The sample included 114 participants identifying as White/European American, 18 as Asian/Asian American, 9 as Black/African American, 4 as Hispanic American/ Latinx, 5 as multiracial, 2 as other/not reported.

Most of the sample ($n=150$) reported a specific major and 2 reported undecided. Ninety-six participants were majoring in business, social sciences, education, or fine arts and 54 were majoring in STEM.

Sensitivity analyses showed sufficient power (0.80; $\alpha=.05$) to detect small-to-medium sized regression coefficients in all analyses ($f^2 = 0.05$ for models with one to three predictors; Faul et al., 2007, 2009).

Procedure. Participants reported their beliefs and attitudes toward their major and career and completed a measure of proactivity. Finally, participants answered demographic questions, were debriefed, and were thanked for their participation.

Measures. The measures of proactive mindset ($\alpha=0.89$) and career attitudes [$r(149) = 0.48, p < .001$] were identical to Study 1.

Role affordances. Participants rated how much they perceived both their major and future careers to offer opportunities to meet communal and agentic goals. Participants responded to several items beginning with the statement, “As a student for the courses in your major, are you able to...” and included three communal goals (*be altruistic, work with others, and help others*) and three agentic goals (*achieve, gain power, be independent*). Items for future career affordances were identical but began with the statement, “In your future career, will you be able to...”. Participants rated each opportunity from 1 (*Not at All*) to 7 (*Extremely*). Items were averaged across the roles to form indices of communal affordances ($\alpha = 0.80$) and agentic affordances ($\alpha = 0.71$).

Behavioral flexibility. Participants rated how flexibly they believed they could behave in their major or future career on 12 face-valid items.⁴ For the 6 items related to the major, items began “When I think about my major...” and included the following: *It is clear that there is variety in how to behave in my major, There are not many options for how to pursue my major*, Everyone in my major seems to be the same*, I feel I could choose my own way in my major, Everyone seems to do things in my major slightly differently, and There is only one path to success in my major**.⁵ For the 6 items related to future career, the words “my major” were replaced with “my future career.” Participants rated their agreement on scales from 1 (*Strongly disagree*) to 7 (*Strongly agree*). A principal component factor

⁴ Existing measures did not suit the purposes of this study because they focused on specific tasks in employment contexts (Jackson et al., 1993; Parker et al., 1997, 2006; Parker & Sprigg, 1999).

⁵ Items marked with an asterisk were reverse-scored.

analysis of the 12 items confirmed one factor that accounted for 33.4% of the variance with an eigenvalue of 4.00. These items were averaged to form an index of behavioral flexibility ($\alpha=0.81$).

Results

Table 2 shows correlations among variables. Initial analyses tested for participant gender effects but did not find moderation by or main effects of gender. Further, when we controlled for participant gender in analyses, results remained significant and of equivalent magnitude. Thus, participant gender was omitted from analyses.

Table 2. Zero-Order Correlations (Study 2)

	Communal Affordances	Agentic Affordances	Behavioral Flexibility	Career Attitudes
<i>Proactive Mindset</i>	.31***	.27**	.20*	.28**
<i>Communal Affordances</i>	—	.54***	.19*	.34***
<i>Agentic Affordances</i>		—	.23*	.31***
<i>Behavioral Flexibility</i>			—	.09

Note. N = 152. * $p < .05$, ** $p < .01$, *** $p < .001$

Proactive mindset, affordances, behavioral flexibility, and career attitudes. We examined a parallel path model to examine affordances or behavioral flexibility as plausible mediators between proactivity and positive career attitudes (Figure 3; Hayes PROCESS Macro Model 4; 10,000 bootstrapped samples). As before, we address three assumptions involved in mediational analyses (Rohrer & Hünernmund, 2021). Examination of plots of residuals versus predicted values provided support for linear relationships in this model. Further, moderation analyses did not find interactions among proactivity, affordances, and behavior flexibility (all $ps > .14$). Finally, we cannot rule out measurement error or other potential causal variables, and so we cannot infer causality from this analysis.

Proactivity was associated with both types of affordances, as well as with behavioral flexibility. Communal affordances were positively associated with career attitudes, whereas agentic affordances and behavioral flexibility were not significantly related to career attitudes. Similar to Study 1, affordances are positively related to career attitudes, although here the association is only significant for communal affordances. Most important, this analysis demonstrates that it is not the case that association between proactivity and role attitudes can be reduced to perceiving greater latitude to behave flexibly in the role.

Figure 3. Parallel model testing indirect effects of affordances and behavioral flexibility

Note. The figures present unstandardized beta coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

This study provides further evidence that proactivity is associated with heightened perceptions of both communal and agentic opportunities in roles. Yet, the tendency for these more expansive affordances to be associated with role positivity cannot be reduced to generalized perceptions of behavioral flexibility in roles. Individual differences in proactive mindset predicted variation in the sense

that one could behave more flexibly in current and future professional roles, but these perceptions of flexibility did not directly predict career attitudes. Instead, seeing possibilities to fulfill fundamental motives (in these data, particularly communal motives) appears to be a robust pathway to positive role attitudes. We note that Study 1 and Study 2 differ in whether communal affordances or agentic affordances significantly predict role positivity. This variation across studies might be due to difference in the design (longitudinal in Study 1; cross-sectional in Study 1), to the affordance measures (career affordances in Study 1; major and career affordances in Study 2), or to the other variables included in the models (Time 1 career attitudes in Study 1; behavioral flexibility in Study 2). Yet despite this variation, we note that proactivity is consistently positively associated with affordances, and perceiving a greater range of opportunities, whether communal or agentic, is positively associated with role attitudes. Together, Studies 1 and 2 demonstrate that individual differences in proactive mindset are associated with a more expansive perspective of the motivational opportunities within roles, and these perceived motivational opportunities relate to beneficial views of one's future roles.

Study 3

Study 3 examines what contexts might set in motion the sense that people see themselves as able to shape their environment to meet their goals. This study investigated whether proactivity is fostered by contexts known to promote expansiveness of goal opportunities. In prior research, growth-oriented contexts (vs. fixed-oriented contexts) were perceived as providing opportunities for both communal and agentic goals (Fuesting et al., 2019). In Study 3, we investigated whether psychological immersion in growth-oriented contexts (vs. fixed contexts) elicited greater proactive responses. We then examine whether the associations between those proactive responses, affordances, and role attitudes replicate the patterns demonstrated in Studies 1 and 2.

Method

Participants. Participants were 124 undergraduate students (39 men, 84 women, 1 not reported; Age: $M = 18.69$, $SD = 1.05$) from a large Midwestern university who participated in exchange for partial fulfillment of an introductory psychology course requirement. The sample included 91 participants identifying as European American, 8 as African American, 12 as Asian American, 6 as Hispanic/Latinx, 5 as multiracial, and 2 not reported.

The majority of the sample ($n=118$) reported a specific major; few ($n=6$) were undecided. Of those reporting a major, 67 reported business, social sciences, education, or fine arts, and 51 reported STEM.

Sensitivity analyses showed sufficient power (0.80; $\alpha=.05$) to detect medium-sized effects (Faul et al., 2007, 2009). Independent samples t-tests were powered to detect an effect size of $d = 0.51$ or larger, and mixed model ANOVAs with 2 groups and 2 dependent measures could detect within-between interactions with an effect size of $f^2 = 0.13$ or larger.

Procedure. Participants considered their math or science courses “from the past few years” and then were randomly assigned to consider an instructor who exemplified a growth or a fixed mindset (adapted from Fuesting et al., 2019).

Participants in the growth mindset condition read the following:

Today we are interested in a math or science course that was taught by a teacher or professor who **most strongly believed** that intelligence or talent in math or science can be grown and developed through hard work, effort, practice, and persistence.

Participants in the fixed mindset condition read the following:

Today we are interested in a math or science course that was taught by a teacher or professor who **most strongly believed** that intelligence or talent in math or science is just one of those things that is innate, in that some people just have it and others don't regardless of how hard they try.

Participants provided either the course name or instructor and then responded in writing to the prompts, “Please take a few minutes to write about what this was like, how you felt, and what you did.”

Participants could not advance to the next screen until 2 minutes had elapsed.

Measures.

Proactive mindset. Participants completed a measure of context-specific proactive mindset by responding to the following prompt: “Consider your reflection about what it was like to be in this professor’s class. As a student enrolled in that class, how much did you feel encouraged to...” and responded to each item on a scale from 1 (*Not at all*) to 7 (*Very much*). The adapted proactive mindset items were nearly identical to the measure used in Studies 1 and 2, with slight wording changes to specify context (see Table 3). Items were averaged ($\alpha=0.95$).

Table 3. General and Context-Specific Proactivity Measures

<i>General Proactivity (Seibert et al., 1999)</i>	<i>Context-Specific Proactivity</i>
Please rate your agreement with the following statements.	As a student enrolled in that class, how much did you feel encouraged to...
I am constantly on the lookout for new ways to improve my life.	Be on the lookout for new ways to improve your life.
Wherever I have been, I have been a powerful force for constructive change.	Be a more powerful force for constructive change.
Nothing is more exciting than seeing my ideas turn into reality.	Be excited about seeing your ideas turn into reality.
If I see something I don’t like, I fix it.	Fix things if you see something you don’t like.
No matter what the odds, if I believe in something I will make it happen.	Make it happen if you believe in something, no matter what the odds.
I love being a champion for my ideas, even against others’ opposition	Be the champion for your ideas, even against others’ opposition.
I excel at identifying opportunities.	Excel at identifying opportunities.
If I believe in an idea, no obstacle will prevent me from making it happen.	Let no obstacle prevent you from making your ideas happen if you believe in them.
I can spot an opportunity long before others can.	Spot a good opportunity long before others can.
I am always looking for better ways to do things.	

Note. Both general and context-specific proactivity items are provided for comparison. Study 3 participants responded only to context-specific proactivity items.

Career affordances.⁶ Participants considered how much the class encouraged them to focus on different goal opportunities in their careers. Beginning with the statement, “As a student enrolled in that class, how much did you feel encouraged to...”, participants responded 4 items focused on communal career affordances (*think about how your work benefits others, think about how a career in this field will help others in the future, focus on how this coursework leads to the ultimate goal of making a difference in the world, think about how people in this profession ultimately make the world a better place*; $\alpha = 0.92$) and 3 items focused on agentic career affordances (*think about how much money people in this profession make, focus on how much status a career in this field would give me in society, think about how a career in this field would allow me to be independent*; $\alpha = 0.84$). These items were rated on scales from 1 (*Not at all*) to 7 (*Very much*).

Career attitudes. Participants reported attitudes toward a career in a field related to the target course. They responded to three items: “Please rate your general impression of what it would be like to have a career in a field related to this course” [from 1 (*Very negative*) to 7 (*Very positive*)]; “How much would you enjoy working in a career in a field related to this course?”; “How successful would you be working in a career in a field related to this course” [from 1 (*Not at all*) to 7 (*Very much*)]. Items were averaged to form an index of career attitudes ($\alpha=0.86$).

Results

Initial analyses tested for participant gender effects but did not find moderation by or main effects of gender. Further, when we controlled for gender in analyses, results remained significant and of equivalent magnitude. Thus, gender was omitted from analyses. Correlations among variables are

⁶ An initial auxiliary purpose of this study was to examine whether examining how proactivity relates to more psychologically distant versus close goal affordances. Because this investigation was not central to the goal of this paper and the evidence for those claims was weaker, we removed these analyses from the main text. For transparency, we report them in the online supplement.

shown in Table 4. Consistent with other studies, individual differences in proactivity are positively related to both communal and agentic affordances.

Table 4. Zero-Order Correlations (Study 3)

	Communal Affordances	Agentic Affordances	Career Attitudes
<i>Proactive Mindset</i>	.64***	.40***	.46***
<i>Communal Affordances</i>	—	.59***	.65**
<i>Agentic Affordances</i>		—	.51***

Note. N = 124. * $p < .05$, ** $p < .01$, *** $p < .001$

Growth contexts foster proactivity. As predicted, an independent samples t-test found that participants considering the growth context reported greater proactivity ($M = 4.85$, $SD = 1.47$) than those considering the fixed context ($M = 3.84$, $SD = 1.71$); $t(122) = -3.54$, 95% CI = [0.45, 1.86], $p = .001$, $d = 0.64$.

Growth contexts, proactivity, and perceived affordances. Next, we investigated whether context-based proactivity was associated with perceptions of goal opportunities and positive career attitudes. We tested a serial-parallel mediation model in which context predicted proactivity, which predicted communal and agentic career affordances, which in turn predicted career attitudes (see Figure 4; Hayes PROCESS macro model 81; 10,000 bootstrapped samples). Again, we acknowledge that mediational analyses make assumptions. The assumption of linearity was supported through examination of residuals versus predicted values plots. Moderation analyses did not find significant interactions (all $ps > .64$). As with Studies 1 and 2, inferring causality from this analysis is not possible because we cannot rule out the possibility of measurement error or the causal influence of unmeasured variables.

As shown in Figure 4, this model is consistent with a causal sequence in which growth contexts greater proactivity, proactivity is associated with both communal and agentic career affordances, and affordances are associated with positive career attitudes (Contrast = 0.18, 95% CI = [0.01, 0.42]).

Figure 4. Context-based proactivity is associated with greater affordances and career positivity

Note. The figure presents unstandardized beta coefficients. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

This experimental design highlights the causal role of proactivity-supportive contexts in promoting proactive mindset, which in turn is associated with expanded views of opportunities in roles. When individuals recalled educational contexts they perceived as growth-oriented (vs. fixed), they reported greater proactivity and more positive attitudes toward careers associated with topics of that particular educational context. Contextual proactivity was associated with beliefs that both communal and agentic goals could be fulfilled.

General Discussion

Proactive mindset aligns with different mental representations of roles. Across three studies, individuals who expressed more proactive mindsets reported more expansive views of roles as fulfilling fundamental motives of agency and communality. In turn, these more expansive views were associated

with positivity toward relevant career pathways. Further, this research identified a contextual cause of proactivity in situations perceived as promoting individuals' growth.

Because the studies employed similar measures, we summarize the central relationships with an internal meta-analysis aggregating across datasets (Table 5, Goh et al., 2016). Proactivity related positively to perceived communal affordances (95% CI = [0.37, 0.52], $z = 9.82$, $p < .001$) and agentic affordances (95% CI = [0.34, 0.50], $z = 9.19$, $p < .001$). These perceived goal affordances were, in turn, associated with more positive attitudes toward anticipated careers. Indeed, both communal affordances (95% CI = [0.40, 0.55], $z = 10.52$, $p < .001$) and agentic affordances (95% CI = [0.37, 0.53], $z = 9.95$, $p < .001$) were consistently associated with positive role attitudes, consistent with prior research (e.g., Brown, Thoman, et al., 2015; Diekman et al., 2011).

Table 5. Internal meta-analysis of relationships among proactivity, affordances, and attitudes

	<i>N</i>	Proactivity and Affordances		Affordances and Role Attitudes	
		Communal	Agentic	Communal	Agentic
Study 1	146	.39	.58	.44	.54
Study 2	152	.31	.27	.34	.31
Study 3	124	.64	.40	.65	.43
Overall	422	.45	.39	.48	.45

Note: All effect sizes are provided in r . Role attitudes include certainty and positivity. The overall effect size includes the partial correlations among Study 1 Time 2 variables, controlling for Time 1 variables. The meta-analytic effects remained significant, in the same direction, and of similar strength in calculations that either used Time 2 variables without controlling for Time 1 variables or only used Time 1 variables.

Theoretical Implications

These findings expand social structural perspectives by exploring how individuals' cognitive processes might shape their attitudes toward role trajectories. A core claim of social structural theories is that roles influence people's attitudes and cognitions (Diekman, Eagly, et al., 2010; Eagly & Wood, 2012); this current paper addresses the plausibility of a reciprocal path in which individuals cognitively construct their roles. Proactivity – whether assessed as an individual difference or elicited by

experimental manipulation – is associated with more expansive beliefs about the opportunities available in current and future roles. Hence, understanding proactive mindset can further elucidate how individuals are influenced by and influence the social structure, consistent with cultural models of the self (Markus & Kitayama, 2010).

The current work extends the literature on individual differences in proactivity by identifying differential perceptions of role affordances as potential mechanisms through which proactivity might be associated with positive career attitudes. Prior research has documented that general perceptions of behavioral flexibility in roles relate to proactivity (Fuller & Marler, 2009), and Study 2 replicates that association. Yet the current paper provides a novel contribution by delineating that perceived opportunities to fulfill fundamental motives might matter above and beyond anticipated behavioral flexibility. This more nuanced understanding of the potential mechanisms underlying the benefits of proactivity can provide important insights into how individuals cognitively construct their roles.

Practical Implications

These studies can provide insight to developing interventions to promote educational or career motivation and persistence. Prior research has firmly demonstrated the associations between proactive mindset and a variety of career-related outcomes (e.g., positivity, number of promotions; Fuller & Marler, 2009), yet little research has examined contextual antecedents of proactivity or how proactivity might heighten perceived role affordances. An implication of the current research is that organizations need not recruit “proactive people” but, rather, can focus on how to promote more expansive views of roles among existing organizational members. For example, what policies or structures can communicate that individuals have the ability to shape their roles?

Particularly promising is that this research provides novel evidence about a contextual root of proactive mindset. Put simply, proactivity is not solely a property of individuals; proactivity can also emanate from particular contexts. Traditionally, proactivity has been treated as a feature of a person,

and measures have assessed levels of proactive personality (Bateman & Crant, 1993; Fuller & Marler, 2009; Seibert et al., 1999). The current work also draws attention to proactivity as a feature of situations. Certain contexts are more likely to elicit proactive responses than others. Students who considered growth contexts (vs. fixed contexts) expressed more proactivity, which, in turn, was associated with positive career attitudes. Students who recalled instructional settings that emphasized growth and development reported higher levels of proactive responses in those contexts. These findings build on the accumulating evidence about the consequences of organizational mindsets (e.g., Canning et al., 2020; Emerson & Murphy, 2015; Fuesting et al., 2019) by demonstrating proactivity as a novel benefit of growth-focused contexts.

Limitations and Future Directions

The current studies investigated how proactive mindset aligns with beliefs about available opportunities in current or future roles. The correlational nature of these data does not allow us to speak definitively to causation in one direction or another; indeed, goal congruity theory maps out several cyclical relationships in which role experience shapes cognitions and motivations and vice-versa (Diekmann et al., 2017). The foundations of this line of inquiry in goal congruity theory led us to start from the demonstrated effect of perceived affordances on role attitudes, and then to ask how proactivity might align with variation in affordances. We anticipate that the relationships among proactivity, role experience, and affordance beliefs are reciprocal and cyclical. Experiencing a role that affords both communal and agentic goals might lead to the development of proactivity, for example. Although fully mapping these different causal pathways is beyond the scope of the current paper, we see value in documenting the associations between proactivity and perceived affordances. We hope that the current research can lay the groundwork for research programs that investigate these multiple processes.

Another limitation of the current research is that these data did not examine behavioral outcomes or decisions. The present research cannot speak to how college students will ultimately perceive their careers once they occupy them, but it lays a clear foundation to predict that perceived goal opportunities in roles are key to understanding any benefits of proactive mindset. Despite the reality that college decisions set the trajectory for future opportunities, little research has examined proactive orientation within student populations. Because proactivity is associated with both perceiving communal and agentic opportunities, a focus on proactivity in students might inform understanding of developmental trajectories, similar to theories that consider shifts in fundamental motives across the career trajectory and lifespan (e.g., Carstensen et al., 1999).

The present research demonstrated that proactive mindset is associated with greater positivity toward majors or careers via differential cognitive construction of roles. Yet, this work focuses on *perceived* goal opportunities of a context, rather than actual goal opportunities. Studying the sequelae of actual goal fulfillment or frustration can elaborate potential ramifications of proactivity. One possibility is that proactive individuals are especially frustrated by contexts that thwart their proactivity. For example, a biology department might rigidly distinguish between basic and applied science, perhaps signaling that the pursuit of communal goals is not acceptable in that context. In such cases, proactive individuals' ability to pursue communal opportunities, even if they are seen as distally possible, may be hindered by the local culture. Such goal frustration can have negative consequences for well-being: Indeed, when valued goal fulfillment is thwarted in occupational and familial roles, people experience lower positive affect and greater depressive symptoms (Talley et al., 2012). Proactive individuals who feel constrained might thus experience particular detriments to well-being.

Finally, a clear priority for future research is examining how proactivity-role associations vary across group memberships. Drawing from prior evidence, one hypothesis is that proactivity is shaped by socioeconomic status. Cultural analyses suggest SES-based variation in the expression of agency (Snibbe

& Markus, 2005): Middle and upper class subcultures manifest characterizations of agency as self-expression, whereas working-class subcultures manifest agency as resistance to pressure. The conceptualization of proactivity in the current literature may be inherently limited because it reflects higher-SES models of agency. If so, the benefits of proactivity may be less available to low-SES students, thus constituting another form of cultural mismatch between higher education and working-class students (Stephens et al., 2012, 2018). A key step for future research is understanding whether cultivating more expansive construals of roles particularly benefits students from working-class backgrounds. For students whose proactivity is constrained by the social structure, contexts that promote growth and development may be especially important.

Conclusion

Proactive mindset aligns with the construal of a range of possible opportunities in one's roles. Understanding the potential antecedents and consequences of proactive mindset provides insight into how people might differentially perceive their current and their future roles. More proactively-oriented individuals and contexts can align with thinking about roles in ways that highlight opportunities to fulfill fundamental motives: Part of the "power of the situation" may reside in perceiving what might be possible.

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