

Routines and Meaning in Life: Does Activity Content or Context Matter?

Fahima Mohideen¹  and Samantha J. Heintzelman¹

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Abstract

People feel that their lives are more meaningful while engaging in behaviors more closely aligned with their routines. Does the behavioral content of these routines and the contextual factors surrounding their enactment matter for this relationship? In two experience sampling studies ($N = 93$, 1,512 episodes; $N = 97$, 1,629 episodes), we test whether the relationship between routines and meaning in life (MIL) depends on the content of the activities. We found that the degree to which one's current activity is a routine positively related to momentary MIL beyond other meaningful features (e.g., relationships, goals, prosociality) of that activity. We conducted Study 2 in the context of mass routine disruptions of the COVID-19 pandemic. We found even stronger relationships between routine enactment and concurrent MIL in this context which held controlling for factors, including perceived chaos, mood, and anxiety. These findings suggest that routines *uniquely* relate to MIL, beyond the meaningfulness of their content and across contexts.

Keywords

meaning in life, well-being, routines, experience sampling

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The daily lives of most people—though accented with moments of novelty, spontaneity, and unpredictable chaos—are highly routinized. Professional meetings recur on schedule (Niemantsverdriet & Erickson, 2017), midday gym-goers may balk at the thought of exercising in the evening (Tappe et al., 2013), and beauty regimens are executed consistently from day to day (Ehn & Löfgren, 2009). Daily life advances through time in a highly routine fashion. While dominant cultural images and scientific conceptualizations of worthwhile lives and endeavors emphasize the bold and extraordinary, recent evidence illuminates the importance of routines for meaningful lives and experiences. A trait preference for engaging in routines positively relates to meaning in life (MIL), and participants report higher feelings of meaning while enacting more routine behaviors than when they are behaving in less routine ways (Heintzelman & King, 2019). Still, the highly routinized life is antithetical to traditional notions of a meaningful existence which urges a deeper understanding of their connection.

There are two general explanations for the association between routines and MIL. Routines may feed directly into feelings of MIL as they provide a sense of coherence, a facet of meaningfulness (King et al., 2006). Still, there remains an alternate explanation that has not been accounted for in previous research regarding this relationship: Routines could relate to MIL only incidentally, if people tend to routinize aspects of their lives that are, in

themselves, meaningful. To incorporate routines into the scientific understanding of MIL, it is essential to clarify the nature of this relationship by examining the role of activity content in the relationship between routines and MIL.

The Case for a Direct Relationship Between Routines and MIL

MIL is the amalgamation of three facets (King et al., 2006; Martela & Steger, 2016): (a) purpose, or engagement in goal-relevant pursuits; (b) significance, which describes feelings of mattering; and (c) coherence, or the degree to which the world, and one's place in it, makes sense. Routines are habitual, predictable ways of acting (Corbin, 1999). Through automaticity and fixed temporal patterns (Avni-Babad, 2011; Ludwig, 1997), routines reduce the burden of effortful regulation and maximize productivity by freeing attention for other stimuli (Clark, 2000).

Routines are theoretically relevant to each of the definitional facets of MIL (Heintzelman & King, 2019), most identifiably, coherence. A person's ability to make sense of the

¹Rutgers, The State University of New Jersey, Newark, USA

Corresponding Author:

Fahima Mohideen, Rutgers, The State University of New Jersey, University Avenue, Newark, NJ 07102, USA.
Email: fm399@rutgers.edu

world and comprehend their place in it is supported by regularity, predictability, and reliable connections (Antonovsky, 1993; Baumeister, 1991; Baumeister & Vohs, 2002). The meaning-as-information framework proposes that feelings of meaning provide information about the presence of reliable patterns and coherence in the environment which then direct our thoughts and actions in situationally appropriate ways (Heintzeman & King, 2014). Importantly, feelings of meaning do not always emerge from an effortful cognitive process as feelings of meaning are tied to intuitive cognitive processing (Heintzeman & King, 2016). Instead, feelings of meaning can be automatically extracted from contexts that makes sense. In studies of coherence and MIL, simple exposure to patterns and associations (i.e., coherence) increased participants' feelings of MIL (Heintzeman et al., 2013). To the extent that routines create patterns and associations within people's daily lives, providing sense-supporting structures, they may directly tie to the experience of MIL.

Testing an Indirect Explanation: The Routinization of Meaningful Activities

While the sense-supporting structure of routines may explain their relevance for MIL, we must consider a remaining plausible alternative: Routines may relate to MIL because people tend to routinize meaningful activities. To the extent that behaviors that are routinized are also meaningful in their own right, the relationship between routine enactment and MIL may be a by-product of the otherwise meaningful content of routinized behaviors. When examining previously identified sources of MIL (Lambert et al., 2010), we found that several of the most common meaning sources—namely, relationships, goals, prosociality, and religion—were engaged in through behaviors that were often carried out in routine ways. In addition to their sense-supporting nature, routines may tap into feelings of meaning due to the already meaningful content of the routine actions. The common routinization of behaviors that support a sense of MIL, through advancing goals, fostering relationships, acting prosocially, or practicing religion, may account for the relationship between routines and MIL.

Goals

Progressing toward one's goals fosters a sense of MIL (Emmons, 2005; Reker & Wong, 1988) and the purpose facet of meaning in particular (Martela & Steger, 2016; Ryff, 1989). Goal-driven actions are pursued with routinized behaviors across almost all spheres of life, including school (Belfiore & Hutchinson, 1998), work (Parmigiani & Howard-Grenville, 2011), and personal health (Stawarz et al., 2014). Furthermore, routines are used to manage interactions and conflicts between different goal areas such as work and family goals (Medved, 2004). Therefore, the relationship between routines and MIL may be a by-product of the standard routinization of goal-oriented pursuits.

Relationships

Participants across the world (Heintzeman et al., 2020) identify their social relationships as the most important sources of meaning in their lives (Lambert et al., 2010). Indeed, social connectedness (Stavrova & Luhmann, 2016) and romantic, family, and friend relationships contribute to a sense that life is meaningful (O'Donnell et al., 2014), and engagement in social events relates to daily meaning (Machell et al., 2015). Relationship maintenance and thriving often involves the enactment of shared routines (Bruess & Pearson, 1997). Furthermore, the routinization of family life (Fiese et al., 2002) and intimate relationships (Dainton & Aylor, 2002) improves relationship functioning and continuity (Fiese et al., 2002). The role of routines in the experience of MIL, then, could be attributed to the involvement of routines in establishing and preserving strong social relationships.

Prosocial Behaviors

Prosocial behaviors foster perceived MIL for prosocial actors (Klein, 2017). Many prosocial behaviors such as volunteering and charitable giving are routinized leading to higher frequencies of engaging in prosocial behavior (Gęsiarz & Crockett, 2015; Taylor-Collins et al., 2019). Carrying out a prosocial behavior habitually may reinforce the intrinsic value of the behavior itself, regardless of whether the action results in positive outcomes for others (Gęsiarz & Crockett, 2015). The routinization of prosocial behaviors may account for the relationship between routines and MIL.

Religion

Finally, religious beliefs can provide the contours of a person's global meaning framework (Park et al., 2013). Beyond trait associations between religiosity and MIL, daily religious behaviors relate to daily feelings of MIL (Steger & Frazier, 2005). Routinized religious practices, such as prayer, service attendance, ritual celebrations, and rites of passage, provide a sense of meaning (la Cour & Hvidt, 2010). The association between routines and MIL may follow from the routinization of already meaningful religious activities.

Taken together, it is clear that aspects of life pertaining to goals, relationships, prosociality, and religion are both profoundly meaningful *and* routinized in many ways. Given evidence supporting the frequent routinization of various meaningful aspects of life, the relationship between routines and MIL may be an incidental by-product of the meaningfulness of the behavioral content of routines. Clarifying this relationship requires the simultaneous assessment of how the process (routinization) and content (e.g., goals, relationships, prosociality, and religiousness) of actions relate to MIL. Does the relationship between routines and MIL hold for all routines or only those routines with otherwise meaningful content?

The Context of Routines

In addition to examining the content of routine behaviors to build a clearer understanding of their relationship with feelings of MIL, we must also consider contextual features that could impact the psychological experience tied to routine enactment. Given their promotion of stability and coherence, routines may be particularly linked to MIL in times of disruption and difficulty.

Routine Disruption

Changes in context can disrupt routine execution. For instance, studies show that environmental events like natural or man-made disasters (i.e., hurricanes and oil spills) resulted in general routine disruptions for surrounding residents (Parks et al., 2018; Smith et al., 2011). Disruptive events, then, provide a rich context in which to further examine the relationship between routines and MIL.

Public health measures in response to the COVID-19 pandemic including quarantine mandates, school closures, and large-scale shifts to remote work upended the everyday schedules of the global masses (Andrew et al., 2020). Dramatic disruptions in time use (e.g., physical activity, sleep, media consumption, alcohol use, social time) were documented among young adults in the United States from March to July 2020 with a corresponding 90% increase in depression rates (Giuntella et al., 2021). Furthermore, larger disruptions to routine behaviors, and particularly to physical activity routines, predicted greater levels of depression during COVID-19 (Giuntella et al., 2021). Public health officials urged the maintenance of daily living routines to enable positive mental health (Hou, Lai, et al., 2020). The World Health Organization (WHO; 2020) issued guidance to “keep your personal daily routines or create new routines if circumstances change.”

Parallel to this routine disruption and mental health deterioration, MIL has also decreased during COVID-19 compared with prior to the pandemic outbreak (VanderWeele et al., 2021), and COVID-19 stress negatively relates to MIL (Arslan & Allen, 2021; Trzebinski et al., 2020). Given this pattern of relationships, it is important to test whether the extent to which an individual’s routines were disrupted in response to COVID-19 related to lower MIL.

Routines in Difficult Times

Routines may protect against the negative effects associated with difficult life periods. The drive to thrive theory of resilience suggests that sustaining the structure of daily routines amid challenge, conflict, or loss is critical to mitigating psychological distress and promoting psychological well-being (Hou et al., 2018). This aligns with research examining positive outcomes after difficulty which demonstrates that when a person’s framework for understanding the world is disrupted, they engage in coping strategies including meaning

making, active coping, or self-regulatory behaviors to regain a coherent understanding of the situation and healthy functioning after the threat (Bonanno et al., 2005; McKnight & Kashdan, 2009; Park et al., 1997). Hou et al. (2018) identify well-built everyday routines as one such mechanism that builds resilience against stressors. For example, prisoners facing prolonged incarceration use routines to cope with stress, pass time, and foster agency (Ricciardelli & Memarpour, 2016). Families with a chronically ill member engage in more routine behaviors which fulfill multiple positive functions for all family members (Crespo et al., 2013). In a meta-analysis of 59 studies of forced migrants, positive associations between trauma and subsequent posttraumatic stress disorder (PTSD) and anxiety were mediated by the regularity of daily primary care routines; upholding daily routines mitigated the negative psychological effects of trauma (Hou, Liu, et al., 2020). Taken together, these findings suggest that routines provide a protective framework in difficult times, allowing individuals to process and alleviate the negative effects of challenging periods. This may suggest that routines would be particularly related to MIL in difficult circumstances.

Overview of Current Studies

We present two experience sampling method (ESM) studies assessing activity process (routinization) and meaningful behavioral content (goals, relationships, prosociality, and religion) to test competing explanations for the relationship between routine and MIL, a direct explanation and indirect third variable explanation in which this relationship is accounted for by the behavioral content of the routines. In addition, we leverage the large-scale routine disruption of COVID-19 in Study 2 to examine the strength of the relationship between routines and MIL in a difficult and disruptive context. First, we seek to replicate the positive relationship between routine enactment and concurrent feelings of MIL (Heintzelman & King, 2019). Second, we empirically test the role of meaningful behavioral content in the relationship between routines and MIL by assessing a host of meaning-relevant features of enacted behaviors. Third, we examine these relationships in the context of environmental incoherence during the COVID-19 pandemic.

Do routines, and even mundane routines, directly associate with MIL or is this relationship a by-product of the meaningfulness of the actions themselves? Finding that routines are similarly associated with MIL regardless of their content would support the direct relationship hypothesis. On the contrary, finding that routines are associated with MIL only in the presence of already meaningful activities would provide evidence for the indirect relationship hypothesis that routines and MIL are associated incidentally. Furthermore, are routines particularly important for MIL in more chaotic or uncertain contexts? Materials, data, code, and preregistered

analysis plans for both studies are available (https://osf.io/fa4yx/?view_only=None).

Study 1

Methods

Does the enactment of any routine positively relate to feelings of meaning or only those routine behaviors with meaning-relevant content (e.g., involving goal pursuit, relationships, prosocial behavior, or religion)? In Study 1, we examine this question by measuring both activity process (routinization) and content in an ESM design.

Participants and Procedures

In total, 115 undergraduates (88 women, 26 men, one unreported) enrolled in the study in partial fulfillment of a course requirement, age $M(SD) = 21.11(3.66)$. Participants represented a diversity of ethnic identities, including 36 Latino/Hispanic/Chicano/Puerto Ricans, 24 Black/African Americans, 18 Middle Eastern/North Africans, 12 Asian/Asian Americans, 10 White/European Americans, and 3 multiracial individual. In a prescreen survey, students who indicated that they used a smartphone and agreed to share their phone number and to complete the surveys were qualified to participate in the study. Students then provided informed consent and demographic details, reviewed study instructions, and completed registration on the SurveySignal survey distribution platform. Beginning the day after study registration, each participant was sent an SMS message with a survey link 3 times a day between 9:00 a.m. and 9:00 p.m. Surveys were spaced semirandomly within 4 hr segments with a minimum of 3 hr between surveys. Survey links expired after 1 hr.

Measures

In each ESM survey, participants described their current activity and location, then completed measures of routine, meaning, and other activity features with all items rated from 1 (*not at all*) to 7 (*very much so*). Participants rated three items regarding the extent to which their current activity was a routine: “The activity I’m doing right now is a part of a routine I have,” “My current activity is one that I’d typically be doing at this time of day/this day of the week,” and “The activity I’m doing now is one I’ve done this way before and will continue to do this way in the future” (Heintzelman & King, 2019), $\alpha = .87$; 422 episodes (27.9%) were rated at the highest level of routine (7), among which most activities involved classwork/homework (127 episodes) and work (96 episodes).

Momentary feelings of MIL were measured using the two-item Daily Meaning Scale (Steger et al., 2008): “How meaningful do you feel your life is right now?” and “How much do you feel your life has purpose right now?” ($r = .92$, $p < .001$).

Table 1. Descriptive Statistics for Level 1 Study Variables.

Variable	Study 1		Study 2	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Routine	5.00	1.82	4.71	1.81
Meaning in life	5.13	1.76	4.73	1.43
Relationships	4.82	1.99	4.60	2.07
Goals	4.07	2.26	3.87	2.12
Religion	1.66	1.56	2.12	1.82
Prosociality	3.33	2.15	3.12	1.92
Health	—	—	4.04	2.03
World chaos	—	—	5.13	1.59
Life chaos	—	—	3.97	1.59
Life satisfaction	—	—	4.54	1.39
Mood	—	—	4.68	1.28
Anxiety	—	—	2.85	1.71
Old routines	—	—	4.53	2.17
New routines	—	—	3.31	2.20

Note. Means and standard deviations are reported at the episode level (Level 1) for all study variables. All variables were measured on a scale from 1 (*not at all*) to 7 (*very much so*), with the exception of life satisfaction, measured on a scale from 1 (*very dissatisfied*) to 7 (*very satisfied*); mood on a scale from 1 (*very bad*) to 7 (*very good*); and anxiety, world chaos, and life chaos measured on a scale from 1 (*not at all*) to 7 (*extremely*).

Then, participants completed five items created to assess the degree to which their present activity was related to relationship closeness, goal pursuit, religion, and prosociality. First, we asked participants who they were currently with and, if they were with someone (882 episodes, 58.3%), “How close to the person you are with do you feel right now?” to measure relationship closeness. To assess the degree to which the behavior was associated with their goals, religion, and prosociality, we asked, “How much is your current activity contributing towards fulfilling one of your goals?” “To what extent is your current activity a religious practice?” and “To what extent is your current activity contributing to a cause that is larger than yourself?” Descriptive statistics for all variables are reported in Table 1.

Results

The initial dataset comprised of 1,585 episodes from 146 participants. Data were cleaned as per the preregistered exclusion criteria—We excluded episodes submitted with no item responses (27 episodes from 18 participants). We also excluded without replacement participants with fewer than three ESM surveys (46 episodes, 35 participants). We retained 1,512 episodes from 93 participants, with participant episode counts ranging from 3 to 24, median = 19, $M(SD) = 16.26(5.54)$.

We calculated sensitivity estimates for Level 1 effects using G*Power 3.1 (Faul et al., 2007). Given the complexity of power analysis for multilevel data, we specified a

within-factor, repeated-measures mixed analysis of variance (ANOVA) with a sample of 1,512 episodes, 93 groups (individuals), and 16 measurements (average episode count). The sensitivity analysis suggested that given our sample, we would be able to detect small effects ($f = .02$) with 80% power.

Multilevel analysis. To account for the nonindependence of repeated-measures data, we conducted a series of multilevel analyses using SPSS (Version 26) testing our hypotheses that the degree to which an activity was a routine or contained meaning-relevant content would predict concurrent feelings of MIL. Episodes (Level 1) were nested within participants (Level 2). We centered predictors within person, allowed slopes to vary randomly, and utilized unstructured covariance matrices. The intraclass correlation (ICC) for MIL was .73, indicating that 73% of variance in MIL was accounted for by differences across participants.

Results of these analyses are reported in Table 2. First, we found a main effect of routine predicting concurrent MIL within person. Multilevel effect sizes are indicated by Level 1 pseudo- R^2 , which for the current model (.08) indicates a small effect. Next, there were medium-sized (pseudo- $R^2 = .12-.13$) within-person effects of the degree that the current activity content promoted relationship closeness, was goal-directed, and was prosocial predicting concurrent MIL. There was not a within-person effect of religion on MIL, perhaps due to the infrequency of religious activities in our sample. These results replicate the positive within-person relationship between routine enactment and MIL (Heintzelman & King, 2019) and provide confirming evidence that engaging in activities involving relationship closeness, goal pursuit, or prosociality associates with higher levels of concurrent MIL.

Next, we ran a series of multilevel analyses to test the competing hypotheses by examining whether the relationship between routine and MIL remains controlling for each of the activity content variables. As detailed in the second panel of Table 2, the degree to which an activity was a routine continued to predict concurrent MIL even when controlling for the relationship closeness, goal orientation, religion, or the prosocial nature of the given activity, supporting the direct relationship hypothesis.

Finally, we conducted additional tests of the competing hypotheses by examining multilevel interactions between routine execution and activity content predicting MIL ratings to determine whether the relationships between routines and MIL differed depending on the content of the activity. Results are reported in Table 3. There were no interactions between routines and behavioral content involving relationship closeness, prosociality, or religion predicting MIL. The goal orientation of an activity did interact with the degree to which it was part of participants' routine to predict MIL such that the consistently positive relationship between routines and MIL was stronger for activities that were more goal-oriented

(Supplemental Figure 1). Again, this analysis supported the direct relationship hypothesis and provided no evidence that this relationship differed based on the meaningful content of the routine behaviors.

In summary, routines predicted MIL above and beyond the meaning relevance of their behavioral content. The degree of relationships between routines and MIL was not consistently moderated by the content of these activities with the exception of goal-oriented behaviors; routines were more strongly related to MIL when they involved goal-oriented activities. These findings support the direct relationship hypothesis, that enacting even mundane routines relates to feelings of MIL, and suggest that the relationship between routines and MIL is not merely a by-product of the otherwise meaningful content of routinized behaviors.

Study 2

Methods

In Study 2, we sought to replicate Study 1 findings and provide an expanded analysis of the role of contextual factors in the relationship between routines and MIL by leveraging the general chaotic environment and sweeping routine disruptions ushered in by the COVID-19 pandemic.

Participants and Procedures

Participants were 108 undergraduate students (72 women, 36 men) who completed the study in partial fulfillment of course requirements, age $M (SD) = 20.60 (5.37)$. Participants included 34 Hispanic/Latinos, 24 Asian/Asian Americans, 18 Black/African Americans, 16 non-Hispanic Whites, one American Indian/Alaskan Native, one Hawaiian/Other Pacific Islander, and 14 individuals belonging to Other ethnic groups.

Participants completed an onboarding survey in which they granted informed consent and provided demographic information. Each participant then received three ESM surveys per day (sent at 10:00 a.m., 3:00 p.m., and 8:00 p.m. through Qualtrics SMS feature) for 7 days beginning the Monday after completing the prescreen (participants' start days spanned across 5 weeks). Data collection occurred in April and May 2020, within the period of widespread COVID-19 lockdowns in the United States. We also extracted baseline MIL scores from a student participant pool prescreen survey collected before the pandemic.

Measures

Prescreen survey. Prior to registering for this study and preceding the onset of the COVID-19 pandemic in the United States (January–February 2020), participants completed a prescreen survey where they rated their MIL using a single item, "I feel a sense of meaning and purpose in my life," rated from 1 (*absolutely untrue*) to 7 (*absolutely true*), $M (SD) = 5.49 (1.26)$.

Table 2. Study I—Effect of Routine and Behavioral Content on MIL.

Variable	MIL						Effect of routine controlling for activity content					
	t	b (SE)	df	95% CI	p	Pseudo-R ²	t	b (SE)	df	95% CI	p	Pseudo-R ²
Routine	3.93***	0.09 (0.02)	79.89	[0.04, 0.12]	<.001	.08	—	—	—	—	—	—
Relationship	3.11**	0.09 (0.03)	60.45	[0.03, 0.14]	.003	.12	4.07***	0.10 (0.02)	79.29	[0.05, 0.15]	<.001	.12
Goals	4.98***	0.10 (0.02)	76.88	[0.06, 0.14]	<.001	.13	2.53*	0.06 (0.02)	86.67	[0.01, 0.10]	.013	.10
Prosociality	5.16***	0.12 (0.02)	78.72	[0.07, 0.17]	<.001	.13	2.71**	0.06 (0.02)	84.34	[0.02, 0.10]	.008	.11
Religion	1.97	0.06 (0.03)	34.86	[-0.00, 0.13]	.057	.04	3.69***	0.08 (0.02)	79.67	[0.04, 0.12]	<.001	.08

Note. MIL = meaning in life; CI = confidence interval.

*p < .05.

Table 3. Study 1—Effect of Interaction Between Routine and Activity Content on MIL.

Variable	Interaction with routine predicting MIL					
	<i>t</i>	<i>b</i> (<i>SE</i>)	<i>df</i>	95% CI	<i>p</i>	Pseudo- <i>R</i> ²
Relationship	-1.54	-0.02 (0.01)	38.73	[-0.05, 0.00]	.133	.20
Goals	2.27*	0.02 (0.01)	39.72	[0.00, 0.04]	.029	.20
Prosociality	1.38	0.01 (0.01)	21.08	[-0.01, 0.03]	.182	.20
Religion	1.81	0.04 (0.02)	65.35	[-0.00, 0.09]	.074	.12

Note. MIL = meaning in life; CI = confidence interval.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Onboarding measures. At study onboarding, we assessed participants' routines in relation to the COVID-19 pandemic with four items rated from 1 (*not at all*) to 7 (*extremely*). Participants reported the consistency of their routines prior to the pandemic, "Prior to the coronavirus outbreak, to what extent was your daily life characterized by consistent routines?" and presently during the pandemic, "To what extent is your daily life now, in the midst of the coronavirus outbreak, characterized by consistent routines?" They also rated the degree to which their routines were disrupted by the pandemic, "To what extent has the coronavirus outbreak disrupted your daily routines?" and how much they had created new routines during the pandemic, "To what extent have you established new routines in adjusting to the coronavirus outbreak?"

Finally, participants completed the 10-item Meaning in Life Questionnaire (Steger et al., 2006), which includes presence (e.g., "I understand my life's meaning") $M(SD) = 4.83(1.23)$, $\alpha = .87$, and search subscales (e.g., "I am searching for meaning in my life") $M(SD) = 5.03(1.33)$, $\alpha = .89$, with each item rated from 1 (*absolutely untrue*) to 7 (*absolutely true*).

ESM measures. Each ESM survey included the same items as Study 1: Participants first described their current activity, and then rated the extent to which that activity was a routine, $\alpha = .87$, as well as the degree to which it fostered relationship closeness and was goal-oriented, prosocial, or religious in nature. They also rated their MIL as in Study 1, $r = .87$, $p < .001$. We included two additional activity content items in this study. To assess prosociality more explicitly, we added, "To what extent do you feel this activity is contributing towards the well-being of someone other than yourself?" and computed an average score of the two items for prosociality, $r = .78$, $p < .001$. In addition, as health-related behaviors became particularly important and salient during the COVID-19 pandemic, participants also rated, "To what extent is this activity one that will contribute to your good health?"

Participants also rated two items regarding the duration of their routines from 1 (*not at all*) to 7 (*very much so*): "This is a long standing routine that I have been doing for more than one month," and "This is a newly created routine that I have

been doing for less than one month." These items shared a small negative correlation, $r = -.24$, $p < .001$, and were treated as individual items.

Next, participants rated their feelings of anxiety and perceived chaos from 1 (*not at all*) to 7 (*extremely*) on three items, treated separately in all analyses: "I feel anxious right now," "To what extent do you feel the world is chaotic right now?" and "To what extent do you feel your life is chaotic right now?"

Finally, participants reported on their general subjective well-being with "How satisfied are you with your life right now?" from 1 (*very dissatisfied*) to 7 (*very satisfied*) and "Rate your current mood from 1 (*very bad*) to 7 (*very good*)."

In the final ESM survey, participants once again completed the three items from the onboarding survey pertaining to routines during the COVID-19 pandemic.

Results

In total, 100 participants completed 1,729 ESM surveys. Eight participants who had signed up for the study did not complete any ESM surveys. We excluded four episodes from participants who had submitted fewer than three episodes in total, 93 episodes submitted within 1 hr of the participants' previous episode, and three episodes submitted surpassing participants' limit of three daily episodes. The final dataset is comprised of 1,629 episodes from 97 participants. Participant episode counts ranged from 3 to 21, $M(SD) = 16.70(4.74)$, median = 18. We generated sensitivity estimates for Level 1 effects. With 1,629 episodes, 97 groups, and 17 measurements (average episodes per participant), we can detect small effects ($f = .02$) with 80% power.

Descriptive statistics for all variables measured in the ESM surveys are reported in Table 1. Notably, participants perceived the external world as quite chaotic in the ESM surveys, $M(SD) = 5.13(1.59)$, which significantly differs from the neutral scale midpoint (4), $t(1621) = 28.57$, $p < .001$, $d = 0.71$, confirming that participants were facing a difficult context during this early period of the COVID-19 pandemic.

We examined how participants assessed their routines in relation to the pandemic at onboarding and in the final ESM survey. At study onboarding, they reported having had

significantly higher levels of routine before the pandemic, $M (SD) = 5.18 (1.45)$, compared with during the pandemic, $M (SD) = 4.06 (1.72)$, paired $t(95) = -5.04$, $p < .001$. MIL at onboarding was positively correlated with retrospective reports of presence of routines before COVID-19, $r = .26$, $p = .009$, and presence of routines during COVID-19, $r = .21$, $p = .04$. In the final ESM survey, participants again reported moderate presence of routines during the pandemic, $M (SD) = 4.43 (1.68)$. In addition, participants explicitly reported high levels of daily routine disruption after the COVID-19 outbreak at onboarding, $M (SD) = 5.65 (1.67)$, and at the end of the study, $M (SD) = 5.26 (1.70)$. Finally, at onboarding, participants reported moderate levels of new routine creation as they adjusted to the pandemic, $M (SD) = 4.39 (1.55)$, which increased slightly, though not statistically significantly, at the end of the study, $M (SD) = 4.80 (1.56)$.

We next explored changes in MIL with the onset of COVID-19 and how these shifts relate to routine variables. To do this, we calculated a difference score to capture MIL changes from the pre-COVID-19 prescreen survey to the onboarding survey completed during a pandemic lockdown period, $M (SD) = -0.67 (1.21)$. The negative mean indicates that participants, on average, showed a decline in MIL with the onset of COVID-19. We next examined the correlation between MIL change and the presence of routine at onboarding. Participants who reported having less consistent routines during COVID-19 had greater drops in MIL from the pre-COVID-19 prescreen to the COVID-19 concurrent onboarding, $r = .24$, $p = .03$.

Multilevel analysis. To examine our central hypotheses, we ran multilevel analyses with episodes (Level 1) nested within participants (Level 2), random intercept and slopes, and unstructured covariance matrices, using SPSS and R. The ICC indicated that 68% of variance in MIL can be accounted for by differences across participants, indicating that multilevel models are appropriate.

We replicated the primary findings from Study 1 which are reported in Table 4. There was a within-person effect of routine on MIL; participants rated their lives as more meaningful at times in which they were engaging in a behavior that was more routine. This relationship represents a medium-sized effect (pseudo- $R^2 = .16$), larger than the relationship in previous work conducted in a less chaotic context. We also replicated positive within-person relationships between relationship closeness, goal directedness, prosociality, religion, and health promotion and MIL. In addition, long-standing routines and MIL were positively related, and perceived life chaos and MIL were negatively related.

We next ran models predicting MIL from routine after controlling for each activity content variable as well as the assessed contextual factors (Table 4). Once again, routines continued to predict MIL after controlling for each activity content variable. In addition, routines continued to be positively associated with MIL after controlling for contextual factors, including the newness of the routine, perceived

world and life chaos, mood, and anxiety. The positive association between routine and MIL remained robust even when accounting for various features of the activity content and context providing further evidence for the direct relationship hypothesis that routines directly and robustly relate to MIL.

Again, we tested multilevel interactions between each activity content variable and routine predicting MIL (Table 5). None of the activity content variables interacted with routines to predict MIL in this study; we did not replicate the interaction between routines and goal-orientation effects from Study 1 in this sample. The magnitude of the relationship between routines and MIL did not depend on the behavioral content of the activity.

Finally, we conducted a series of interaction analyses to address our research questions regarding the contextual features surrounding the routine execution (Table 5). We examined interactions between the perceived context difficulty and routines predicting MIL to test whether routines are more tightly tied to MIL in difficult times. We did not find evidence for this contextual prediction: Perceived chaos, mood, or anxiety did not moderate the relationship between routines and MIL.

Discussion

Which routines are associated with feelings of MIL? We sought to test competing explanations for the relationship between routines and MIL, whether there is a direct relationship between the two or whether this relationship depends on the meaningfulness of the content of the routine behaviors. We found support for the hypothesis that there is a direct relationship between the two—All routines, regardless of their content, predicted concurrent feelings of MIL. In two studies, routine behaviors predicted MIL beyond the degree to which they fostered relationship closeness, goal pursuit, prosociality, or religiosity. In both studies, we found that routines predicted MIL above and beyond their content; the enactment of even mundane routines positively related to concurrent feelings of MIL. In adding regularity and reliability to lives and experiences, even mundane routines support coherence. While most clearly related to coherence, routines may support other aspects of MIL as well, illuminating their associations with MIL. For example, as routines are often shaped by the norms of the cultural and social context, their enactment can be a thread connecting the self to a larger context, fostering a sense of significance (Gallimore & Lopez, 2002; Super & Harkness, 1997). Critically, our data move beyond the theoretical relevance of routines for MIL and provide empirical support for a direct relationship between the two.

As we found no indications that the strongest meaning sources (Lambert et al., 2010) moderated the relationship between routines and MIL, it is increasingly unlikely that other unmeasured behavioral content features would do so. Nevertheless, future studies may expand content measures to more exhaustively examine this question. Furthermore,

Table 4. Study 2—Effect of Routine and Activity Content/Context on MIL.

Variable	MIL						Effect of routine controlling for activity content/context					
	t	b (SE)	df	95% CI	p	Pseudo-R ²	t	b (SE)	df	95% CI	p	Pseudo-R ²
Routine	4.86***	0.12 (0.02)	72.28	[0.07, 0.17]	<.001	.16	—	—	—	—	—	—
Relationship	3.62***	0.07 (0.02)	62.42	[0.03, 0.10]	<.001	.05	4.92***	0.12 (0.02)	71.83	[0.07, 0.16]	<.001	.16
Goals	5.85***	0.11 (0.02)	72.08	[0.07, 0.15]	<.001	.16	4.14***	0.10 (0.02)	72.60	[0.05, 0.14]	<.001	.18
Prosociality	5.37***	0.14 (0.03)	78.06	[0.09, 0.19]	<.001	.16	4.50***	0.10 (0.02)	71.21	[0.06, 0.15]	<.001	.17
Religion	3.84***	0.11 (0.03)	39.28	[0.05, 0.17]	<.001	.04	4.80***	0.12 (0.02)	72.11	[0.07, 0.16]	<.001	.16
Health	4.58***	0.10 (0.02)	86.35	[0.06, 0.15]	<.001	.18	4.26***	0.10 (0.02)	73.37	[0.06, 0.15]	<.001	.18
Old routines	4.69***	0.08 (0.02)	58.23	[0.05, 0.11]	<.001	.08	4.14***	0.12 (0.03)	136.76	[0.06, 0.17]	<.001	.15
New routines	1.35	0.03 (0.02)	73.80	[-0.01, 0.07]	.176	.10	5.07***	0.12 (0.02)	72.94	[0.07, 0.17]	<.001	.15
World chaos	0.61	0.02 (0.04)	66.59	[-0.06, 0.11]	.545	.09	4.81***	0.12 (0.02)	72.19	[0.07, 0.16]	<.001	.15
Life chaos	-2.51*	-0.08 (0.03)	83.16	[-0.15, -0.02]	.012	.09	4.86***	0.12 (0.02)	72.05	[0.07, 0.17]	<.001	.15
Mood	9.06***	0.30 (0.03)	92.06	[0.23, 0.36]	<.001	.24	4.79***	0.11 (0.02)	71.26	[0.06, 0.15]	<.001	.24
Anxiety	-1.69	-0.04 (0.03)	67.63	[-0.10, 0.01]	.090	.04	4.82***	0.12 (0.02)	72.61	[0.07, 0.17]	<.001	.16
Life satisfaction	10.51***	0.38 (0.04)	91.63	[0.31, 0.45]	<.001	.31	4.33***	0.08 (0.02)	69.06	[0.04, 0.12]	<.001	.29

Note. MIL = meaning in life; CI = confidence interval.

*p < .05. ***p < .001.

Table 5. Study 2—Effect of Interaction Between Routine and Activity Content on MIL.

Variable	Interaction with routine predicting MIL					
	<i>t</i>	<i>b</i> (SE)	<i>df</i>	95% CI	<i>p</i>	Pseudo- <i>R</i> ²
Relationship	−0.89	−0.01 (0.01)	103.29	[−0.03, 0.01]	.373	.18
Goal	−1.71	−0.01 (0.01)	48.17	[−0.03, 0.00]	.087	.24
Prosociality	−1.26	−0.01 (0.01)	83.35	[−0.03, 0.01]	.209	.26
Religion	−0.43	−0.01 (0.01)	222.64	[−0.03, 0.02]	.668	.19
Health	−0.89	−0.01 (0.01)	16.90	[−0.02, 0.01]	.372	.29
Old routines	3.07**	0.02 (0.01)	35.94	[0.01, 0.04]	.002	.12
New routines	−0.35	−0.00 (0.01)	47.43	[−0.02, 0.01]	.724	.23
World chaos	0.25	0.00 (0.02)	351.39	[−0.03, 0.03]	.801	.21
Life chaos	0.27	0.01 (0.02)	40.06	[−0.03, 0.04]	.783	.24
Mood	−0.69	−0.01 (0.01)	15.90	[−0.03, 0.02]	.492	.33
Anxiety	0.25	0.00 (0.02)	39.53	[−0.03, 0.04]	.803	.21
Life satisfaction	0.07	0.00 (0.02)	42.43	[−0.03, 0.03]	.942	.33

Note. MIL = meaning in life; CI = confidence interval.

***p* < .01.

an experimental paradigm can test whether initiating the routinization of mundane versus meaningful behaviors equally or differentially fosters a sense of MIL compared with controls.

While representing a strong test of the direct versus indirect relationship between routines and MIL across contexts, these studies maintain a few important limitations that can be addressed in subsequent work. Although our study participants were racially diverse, additional tests of the generalizability of these findings beyond undergraduate samples remain as an important next step. For example, compared with younger adults, older adults show a greater preference for routines and regularity (Bergua et al., 2006; Monk et al., 1997; Reich & Zautra, 1991) and also perceive their lives to be more meaningful (Steger et al., 2009), and so this work should be replicated across the life span.

In addition, the ESM study design used here involves making calculated trade-offs between participant burden and compliance. As research shows that longer ESM questionnaires increase participant burden, compromise data quantity and quality (Eisele et al., 2020), and lead to lower response rates (Rolstad et al., 2011), we chose to follow ESM measurement conventions by assessing some variables of interest with brief and sometimes single-item measures, potentially compromising the internal reliability of these assessments compared with longer assessments. There are some indications that single-item measures of well-being can have reliabilities comparable with multiple item measures (Cheung & Lucas, 2014; Jovanović & Lazić, 2020; Steger et al., 2008), yet considerations of the limitations of this measurement strategy are still warranted.

The direct relationship between routines and MIL has important implications for the conceptualization and study of MIL. Some scholarly approaches conceive of MIL as the grandiose achievement of an ideal status of moral goodness (Auhagen, 2000). Our work adds to evidence suggesting that

rather than exclusively representing an existential summit, MIL is also embedded in the mundanity of daily living (King & Hicks, 2009). Conceptualizations of MIL must accommodate regular people's experiences of meaning in everyday life.

Routines in Challenging Contexts: The Case of COVID-19

In offering stability and coherence, routines may be particularly important for maintaining meaning in otherwise incoherent contexts, such as the COVID-19 pandemic. Amid high levels of perceived chaos accompanying the pandemic in Study 2, routines shared a positive association with MIL independent of the behavioral content ratings. Furthermore, the relationship between routine and MIL was stronger during the COVID-19 pandemic (Study 2 pseudo-*R*² = .16, medium) than before (Study 1 pseudo-*R*² = .08, small). This provides some indication that routines may be particularly relevant for maintaining feelings of MIL in difficult times, when other sources of MIL, like social connections or goal progress, are thwarted. The ability to maintain one's routines may be a protective factor in challenging circumstances (Ren et al., 2021; Smith et al., 2011), lending otherwise chaotic circumstances some semblance of order, coherence, and meaning. Still, subjective perceptions of chaos did not directly moderate the relationship between routines and MIL, and so future research should follow participants over time to directly test the comparative strength of the relationship between routines and MIL across contexts.

Evaluating Advice to Create New Routines

The WHO (2020) recommend developing and maintaining daily routines to preserve mental health during the COVID-19 pandemic. This is sound advice in light of our findings

linking routines to greater MIL particularly when assessed during this challenging time. As the Centers for Disease Control and Prevention (CDC; 2019) suggests, these routines can lend a sense of control and act as an anchor during chaotic times. Indeed, new research suggests that daily routines may act as an effective coping mechanism for psychological distress caused by difficult life situations like financial strain (Hou et al., 2021).

However, less is known about how *newly created* routines compare with established routines in their relationship with MIL. In the present work, the degree to which a routine was rated as long-standing predicted MIL whereas indicating that the routine was newer was unrelated to MIL, highlighting the importance of time in establishing routines that are linked to feelings of meaning. New routines require effort to initiate and may be difficult to establish before they become linked to reinforcing feelings of meaning; this possibility invites inquiry into the role of meaning in establishing durable behavioral changes (e.g., a new exercise routine). The drive to thrive theory suggests that it is important to take a sequential approach when creating new routines, taking the time to consolidate existing routines and each additional step of the developing routine before expanding the new or existing routine further (Hou et al., 2018). This finding also raises a methodological hurdle—Short-term laboratory manipulations of routines are not likely to foster MIL. Instead, longitudinal interventions embedded in real-life contexts will be required to test how routines may causally affect MIL.

Conclusion

Meaningful lives need not be filled with grandiose pursuits—This experience can be found in the everyday execution of business as usual. Routines are directly and uniquely related to greater MIL, and they confer added benefits during chaotic times. The relationship between routines and MIL is robust to content and context, suggesting that routines are a lucrative avenue for daily meaningful experiences. Based on these findings, individuals may be encouraged to create and maintain routine activities, as even something as simple as a morning coffee routine relates to adaptive feelings of life as meaningful.

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ORCID iD

Fahima Mohideen  <https://orcid.org/0000-0003-2693-3813>

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