

# Naïve Definitions of Action and Inaction: A Study of Free Associations Using Natural Language Processing and Top-Down Coding

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## Abstract

**Background:** Even though the terms “action” and “inaction” have been used to describe objects of attitudes, behaviors, and goals, the meaning of action and inaction for lay people has not been investigated. **Method:** In Study 1, participants were asked to spontaneously generate words and behaviors associated with action or inaction. In Studies 2 and 3, participants were presented with behaviors and asked to report whether each behavior involved agency, effort, and change. **Results:** Natural language processing of the responses from Study 1 revealed lay conceptualizations included topics related to occurrence, agency, effort, and change. In Studies 2 and 3, simple regressions showed agency, effort, and change correlated with judgments of action and inaction. However, once these predictors were simultaneously entered into a multiple regression, effort captured most of the variance. **Conclusions:** These findings suggest that, even though agency and change are important to the definition of action and inaction, effort is paramount.

**Keywords:** Action, inaction, naïve definitions, language processing.

## Resumen

**Definiciones Naïve de Acción e Inacción: un Estudio de Asociaciones Libres Realizado con Procesamiento de Lenguaje Natural y Codificación Jerárquica. Antecedentes:** pese a que los términos “acción” e “inacción” se han utilizado para describir objetos de actitudes, comportamientos y metas, no se ha investigado el significado de acción e inacción para los ciudadanos de a pie. **Método:** en el Estudio 1 se pidió a los participantes que generaran espontáneamente palabras y comportamientos asociados con la acción o la inacción. En los Estudios 2 y 3 se presentaron comportamientos y los participantes reportaron si cada comportamiento involucraba intencionalidad, esfuerzo y cambio. **Resultados:** un procesamiento de lenguaje natural de las respuestas del Estudio 1 reveló conceptualizaciones naïve que incluían temas relacionados con la ocurrencia, la intencionalidad, el esfuerzo y el cambio. En los Estudios 2 y 3, regresiones simples mostraron que las dimensiones de intencionalidad, esfuerzo y cambio se correlacionaban con juicios de acción e inacción. Sin embargo, una vez que estos predictores se incluyeron simultáneamente en una regresión múltiple, el esfuerzo capturó la mayor parte de la varianza. **Conclusión:** estos hallazgos sugieren que aunque el cambio y la intencionalidad son importantes para la definición de acción e inacción, la dimensión de esfuerzo es primordial.

**Palabras clave:** acción, inacción, definiciones ingenuas, procesamiento del lenguaje.

The terms *action* and *inaction* have been used in the study of psychology, morality, economics, and decision-making to describe possible objects of attitudes, behaviors, and goals (e.g., Albarracín & Handley, 2011; Albarracín et al., 2008; Albarracín et al., 2011; Albarracín, Wang, et al., 2018; Albarracín et al., 2018; Baumeister et al., 1998; Connolly & Reb, 2005; Dickman, 1990; Hepler et al., 2012; Kahneman & Tversky, 1982; McCulloch et al., 2012; Zell et al., 2013). Despite interest in this topic, however, definitional issues remain unresolved and the meaning of action and inaction for lay people has not been investigated. In this paper, we explored the colloquial meanings of action and inaction, taking a linguistic approach to start to fill in an important gap in the literature.

## Theoretical Definitions of Action and Inaction

Activity can be measured objectively by quantifying the amount of force exerted, or the amount of glucose consumed, during movement. However, whether a behavior is an action or an inaction is a subjective judgment made by an observer based on concepts of action and inaction (Albarracín et al., 2019). For example, behaviors that most people would classify as action can show individual and contextual variations in subjective judgments of how active they are (McCulloch et al., 2012; Sunderrajan & Albarracín, 2018). Yet, what beliefs and meanings produce these variations are currently not known. Instead, there are few theoretical models of the conceptualization of action and inaction as well as inconsistency in the indicators used across domains and researchers, precluding comparisons across studies.

Four dimensions are implicit in the definitions of action and inaction in the literature (see Table 1). First, action and inaction have been defined in terms of the occurrence (i.e., doing) versus the absence (i.e., not doing) of a behavior (Kahneman & Tversky,

Table 1  
Possible naïve definitions of action and inaction

Number	Definition	Action	Inaction
1	Occurrence versus Absence	Doing something	Doing nothing
2	Agentic versus Non-agentic	Intentional; controllable; purposeful; deliberate	Unintentional; uncontrollable; aimless; accidental
3	Effortful versus Effortless	Demanding; energetic; busy	Facile; lethargic; idle
4	Change versus Stasis	Changing status (changes from action to inaction and from inaction to action); deviating from normality; selecting the non-default option	Not changing status (remaining in the same state, as in the case of inertia or continued rest); maintaining normality; selecting the default option

1982). Regardless of what the behavior is, actions are those behaviors one performs, whereas inactions are those behaviors one does not perform. From this perspective, then, *running* is an action, whereas *not running* is an inaction. Second, action and inaction have been distinguished in terms of agency, with action being defined as more intentional and controllable than inaction (Rosset, 2008). Therefore, *pushing somebody* or *breaking a vase* are both perceived as agentic, and thus, as actions. Third, action and inaction have been defined in terms of energy demands or effort (Albarracín et al., 2008; Albarracín et al., 2011). As such, *running* is perceived as more active than *sleeping*, even though sleeping often requires preparatory actions such as getting ready for bed. Finally, action and inaction have been defined in terms of change (Feldman et al., 2018). Within a sequence of behaviors, changes from action to inaction and changes from inaction to action are both seen as effortful, whereas remaining in the same state is seen as relatively effortless, as in the case of inertia or continued rest. Consider downhill skiing. Stopping while descending requires counterforce and movement. Therefore, stopping is an action, even though its endstate is an inaction. Similarly, restarting after interruption requires energy and is, thus, considered an action. Therefore, *stopping* or *starting to run* is considered more active than simply *continuing to run*. According to this definition, then, action can also be defined by deviations from the norm or routine, or by changes to the status-quo. In contrast, inaction can be defined as following the norm or routine, or as maintaining the status-quo (Baron & Ritov, 2009; Byrne, 2016; Johnson & Goldstein, 2003; Kahneman et al., 1990; Samuelson & Zeckhauser, 1988). Because change is more effortful than remaining in stasis, definitions of change may overlap with definitions of effort.

#### Naïve Definitions of Action and Inaction

Although the definitions in Table 1 are all defensible, an important question is the degree to which these definitions represent colloquial understandings of this concept. There is some evidence to suggest that naïve conceptualizations of psychological concepts do not always overlap with theoretical ones (e.g., Pascoal et al., 2014), and such deviations can lead to an incomplete understanding of the psychological dynamic underlying action and inaction. The one exception is research conducted by McCulloch and colleagues (2012), which provides some evidence of naïve understandings of action and inaction. In their study, a group of participants were asked to generate a list of words associated with action or inaction. As examples of action, participants generated words like *select*, *walk*, and *run*. A different group of participants were then asked

to rate these words on a scale from *inaction* (−3) to *action* (+3). Although these three words were all representatives of action, subjective ratings differed: *Select* was rated as the least active, *run* was rated as the most active, and *walk* was rated somewhere in between. But what triggered these perceived differences cannot be ascertained, because the authors did not collect data to assess which meanings accounted for these differences. Therefore, there is little evidence to suggest whether naïve conceptualizations overlap with theoretical ones.

Another concern that arises from the lack of research on the naïve meaning of action and inaction is that we do not know whether occurrence, agency, effort, and change are all equally important, or whether some characteristics play a more important role. For example, although the definition of action and inaction as occurrence versus absence is plausible, it presents some clear-cut problems. For example, based on solely occurrence, *sleeping* would be an action and *not sleeping* would be an inaction, but perceivers are unlikely to classify them in this fashion. Hence, we argue that (b) agency (whether a behavior can be initiated willfully), (c) effort (whether a behavior demands energy), and (d) change (whether a behavior involves changes in state) are likely more defining of action and inaction. The relation between agency, effort, and change, however, is not completely clear. As facets of agency, intentionality and control are psychological devices that direct people to deploy effort going into a task. Similarly, changes in state, such as starting or stopping a task, require effort. Consequently, we anticipated that if people perceive an action to be agentic or involving change, agency, effort, and change would likely predict perceptions of a behavior as an action, but effort may be the most immediate correlate.

The purpose of this paper was to understand the concept of action and inaction, by examining which definitions of action and inaction prevail in naïve representations (Study 1), and the degree to which each dimension confers the meaning of action or inaction (Studies 2-3). Each study queried participants about the meaning of action and inaction. In Study 1, participants were asked to respond to the questions “How would you describe an action?” and “How would you describe an inaction?”. Although Study 1 allowed us to compare definitions obtained in a relatively spontaneous way, we also wanted to assess the relations between these meanings and *ratings* of action and inaction. In Study 2, participants were presented with behaviors and asked to report whether each behavior mapped onto facets of agency, effort, and change. In Study 3, participants were presented with different behaviors and asked to report whether each behavior mapped onto facets of agency and effort. These studies thus allowed us

to determine naïve conceptualizations of behavior and the degree to which different characteristics were integral to how action and inaction are defined. All data files are available at Open Science Framework ([https://osf.io/37wba/?view\\_only=a0d2de7adf8d41139026766f6670d9e6](https://osf.io/37wba/?view_only=a0d2de7adf8d41139026766f6670d9e6)).

## STUDY 1

The purpose of Study 1 was to investigate naïve definitions of action and inaction. In this study, participants were asked how they defined action and inaction and, specifically, the words, thoughts, feelings, physical responses, and behaviors they associated with action and inaction. We hypothesized that naïve definitions of action and inaction would involve the dimensions of occurrence, agency, effort, and change.

## Method

### Participants

Two hundred and twenty undergraduates, recruited from a university subject pool, participated in exchange for partial course credit. Six participants had missing values for the primary outcome measures (action ratings), resulting in a final sample size of  $N = 214$ . The sample included 161 females, 52 males, and 1 person who chose not to disclose their gender. The sample ranged in age from 18 to 24 years ( $M = 18.83$ ,  $SD = 1.13$ ). Informed consent was obtained from all participants before proceeding with the study.

### Procedure

Participants were told that the purpose of the study was to explore how people define and understand what it means to be active and what it means to be inactive. In an open-ended format, participants were asked to respond to the following prompt:

*How would you describe action? What does it mean to “do something?” In the space provided, please write down anything that comes to mind when you think about an action. Think about any words you would associate with doing something; the thoughts that run through your mind when you are active; how you feel when you are doing something; any physical responses you might experience while doing something; or any behaviors you might associate with action.*

Participants were also asked to respond to an identical prompt regarding inaction. The presentation of the action and inaction prompts were counterbalanced.

After responding to each prompt, participants were asked to summarize their descriptions into one sentence by identifying what they felt were key features of action and inaction. Participants were then asked to complete other individual difference measures. These included the Attitudes Towards Action/Attitudes Towards Inaction Scale (McCulloch et al., 2012) and the Beliefs about Intended Action Scale (Sunderrajan & Albarracín, 2017). These data were collected for future work and, as such, are not included in any of the analyses below. Upon the completion of these measures, participants were given a debriefing and thanked for their participation.

## Textual Analysis

*Topic modeling.* As the data collected in this study were qualitative in nature, they were analyzed using topic modeling and manual coding. Topic modeling is a form of text mining that involves finding and tracing recurring patterns of co-occurring words (aka “topics”) in a collection of documents (Ramage, Rosen, Chuang, Manning, & McFarland, 2009). For this analysis, a Latent Dirichlet Allocation (LDA) algorithm was used. LDA is a technique that facilitates the automatic discovery of themes in a collection of documents. The basic assumption behind LDA is that each of the documents in a collection consist of a mixture of topics. As we only observe the words within each document, the topics are latent. Thus, the aim of LDA is to infer this latent topic structure by estimating the relative importance of topics in documents and words in topics iteratively. In this way, topic modeling searches, organizes, and summarizes large collections of textual information, while identifying latent text patterns. This made it an optimal analysis strategy to use to sift through the large body of qualitative responses collected in this study.

To facilitate this analytic procedure, participants’ responses for action and inaction were treated as separate documents and combined into two word-by-frequency matrices. During pre-processing, the files loaded into these matrices were stripped of punctuation, digits, stopwords,<sup>5</sup> and whitespace, to produce a document-term matrix. This document-term matrix was first mined to identify correlations between frequently occurring words, and then associated with a list of topics (where each topic referred to a group of semantically related words that co-occurred frequently) for action and inaction separately. For the preliminary analysis, to identify correlations between action, inaction, and the words that co-occurred with them, *action*, *active*, *inaction*, and *inactive* were kept in the document-term matrix. For the generation of the topic models, however, *action* and *active* were removed from the document-term matrix generated for action and *inaction* and *inactive* were removed from the document-term matrix generated for inaction.

*Manual coding.* To supplement the results from LDA, the data were also manually coded. Our coded categories included the four dimensions of occurrence (*Did the description involve something [versus nothing] happening?*), agency (*Did the description mention intention?*), effort (*Did the description include effortful behaviors?*), and change (*Did the description involve conditions of change? Did the description involve conditions of stasis?*). This process led to the inclusion of four coding categories measured through five items.

To assess inter-rater reliability, two independent pairs of coders were trained to code participant responses. Each pair double-coded 30 of the same responses. Inter-rater agreement was good, with an average of Cohen’s  $\kappa = .74$  across the two pairs ( $\kappa > .40$  is regarded as moderate, Landis & Koch, 1977; or as fair to good, Fleiss, 1981). Throughout the coding process, any disagreements and questions were resolved by discussion and further examination of each response item.

## Results

*Topic modeling.* As part of the preliminary analyses, we identified patterns of frequently co-occurring words in the document-term matrix. In this context, the correlation between

words is a quantitative measure of the co-occurrence of words across multiple documents. An important point to note is that the presence of a term in this list is not indicative of its frequency. Rather it is a measure of the frequency with which the two terms co-occur across documents. The correlation between the words *action* and the words that occurred in the document revealed that action was commonly associated with the occurrence of behaviors (e.g., *performing*,  $r = .36$ ), that were agentic (e.g., *planned*,  $r = .28$ ), effortful (e.g., *difficult*,  $r = .21$ ; *sweat*,  $r = .20$ ); or encompassing effortful behaviors like *think*,  $r = .35$ ; *run*,  $r = .25$ ; or *sport*,  $r = .20$ ), and involving change (e.g., *flows*,  $r = .35$ ; *changes*,  $r = .20$ ). In contrast, inaction was commonly associated with the absence of behaviors (e.g., *refrain*,  $r = .25$ ) and, perhaps, with a lack of intention or indecision (e.g., *simply*,  $r = .24$ ; *happened*,  $r = .25$ ; *spaced*,  $r = .25$ ). The correlation between inaction and justified ( $r = .25$ ) is also interesting, as it suggests that many found it important to justify engaging in inaction.

We then used the LDA algorithm to generate four topics for action and inaction separately (see Table 2). For action, Topic 1 included terms that described action as agentic (e.g., *think*), effortful (e.g., *working*, *running*), and involving change (e.g., *change*). Topic 2 included terms that described action as agentic (e.g., *productive*, *goal*, *accomplished*) and involving change (e.g., *moving*). Topic 3 included terms that described action as an occurrence (e.g., *taking*, *done*) and agentic (e.g., *motivated*). Finally, Topic 4 included terms that described action as an occurrence of a behavior (e.g., *something*, *getting*, *act*), agentic (e.g., *thinking*, *will*), effortful (e.g., *effort*), and involving change (e.g., *movement*). Interestingly, although occurrence versus absence was not as prevalent across these four topics, the physicality associated with “doing something” was (e.g., *making* [topic 1], *physically* [topic 3], *physical* [topic 4]). This shows that naïve definitions of action see action as the *physical* occurrence of behaviors, that involves *will*, *effort*, and *change*.

Similarly, the LDA algorithm for inaction generated four topics but revealed a more complex pattern (see Table 2). Topic 1 included terms that described inaction as non-agentic (e.g., with terms associated with being passive like *watching*, *bored*) and Topics 2-4 included terms that described inaction as the absence of behavior (e.g., *nothing* [topic 2], *don't* [topic 3], *lack* [topic 4]) and effortless (e.g., *lazy*, *relaxed* [topic 2], *laying*, *sleeping* [topic 3], *laziness*, *bed* [topic 4]). Interestingly, however, definitions of inaction frequently emerged from descriptions of how inaction was different from action or how it lacked characteristics of action, implying that action may be perceived as the default state. Therefore, naïve definitions of inaction centered around not doing something, and as the *lack* of action, agency, and effort.

**Manual coding.** Paired-sample *t*-tests were conducted for each of the coding categories to ascertain which categories participants were more likely to use when describing action and inaction (see Figure 1). As predicted, results showed that participants were more likely to describe action as occurrences that were agentic and effortful, and associated with change. In contrast, inaction was more likely to be described as the absence of behavior, low in agency and effort, and associated with stasis. All  $ps < .02$ .

## Discussion

The purpose of Study 1 was to investigate definitions of action and inaction in naïve representations. The topic modeling

analyses generated  $k = 4$  topics partly overlapping with definitions of actions as the occurrence of agentic and effortful behavior, and inaction as the absence of these characteristics. Our manual coding further supported this conclusion. The combination of these results supports lay conceptualizations of action and inaction as overlapping with theoretical definitions of action as (a) occurrence versus absence, (b) agentic versus non-agentic, (c) effortful versus effortless, and, to a lesser extent, (d) change versus stasis.

## STUDY 2

The purpose of Study 2 was to extend the results of Study 1 and determine the degree to which different characteristics predict judgments of action and inaction. In this study, participants were asked to evaluate behaviors on agency, effort, and change. We hypothesized that, because of the strong associations between action with agentic, effortful, and changing behaviors, one of these dimensions would serve as the most important in predicting action.

## Method

### Participants

A hundred and eighty-five undergraduates, recruited from a university subject pool, participated in exchange for partial course credit. Five participants did not submit the survey, resulting in a final sample size of  $N = 180$ . The sample included 99 females, 78 males, and 3 people who chose not to disclose their gender. The participants ranged in age from 18 to 26 years ( $M = 19.06$ ,  $SD = 1.30$ ). Informed consent was obtained from all participants before proceeding with the study.

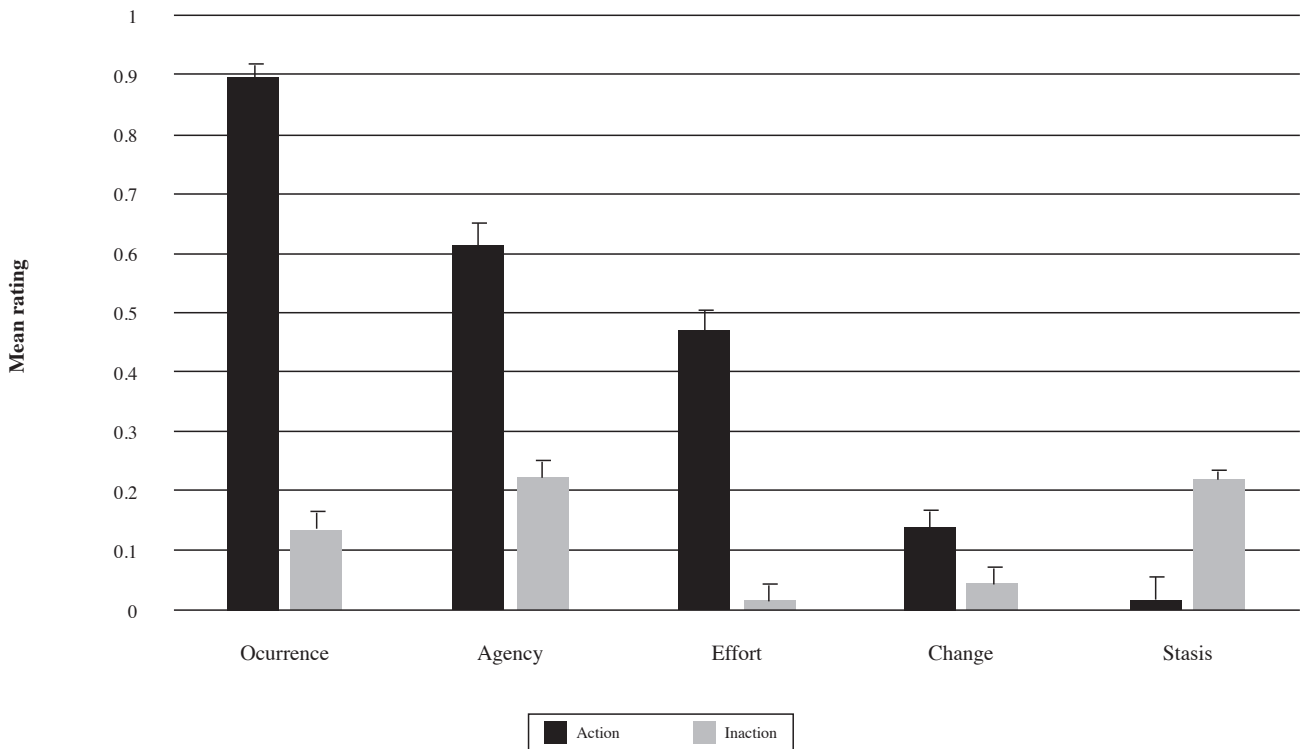
### Procedure

Participants were told that the purpose of the study was to explore how people define and understand what it means to be active and what it means to be inactive. Participants were presented with a subset of words included in McCulloch et al. (2012) that were characteristic of action, inaction, or a combination of the two. Participants were presented with three words that were rated high in action (*run*, *jump*, *kick*), three words that were rated high in inaction (*paralyze*, *unable*, *stationary*), three words that fell somewhere in between the action-inaction continuum (*interrupt*, *compare*, *judge*), as well as the terms *active* and *inactive*. As these words have previously been pre-tested, we had *a priori* expectations that these words would represent the full activity continuum. In addition to these words, participants were also presented with words used in pilot studies that were expected to be rated high in action (*press*, *push*, *pull*, *doodle*) and high in inaction (*meditate*, *mind wander*).

Participants were then asked to rate each word on a list of characteristics found to be commonly associated with action and inaction. This included an assessment of how much a word appeared *intentional*, *goal-directed*, *purposeful*, *deliberate*, *accidental* (reverse scored), and *effortful*. This also included an assessment of whether the word represented a *change* or remaining in *stasis*. Each characteristic was measured on a five-point scale, ranging from 1 (*not at all*) to 5 (*a great deal*). As the Cronbach's alpha for the scale assessing agency (*intentional*, *goal-directed*, *purposeful*,







**Figure 1.** Means comparing the frequency with which each category was used when describing an action or inaction (Study 1). Paired-sample *t*-tests showed a significant difference between all categories. Error bars are based on standard error values

*deliberate, accidental*) ranged from moderate to high across words ( $\alpha = 0.54-0.80$ ), participants' responses were averaged to form an overall index of agency. Participants were then given a debriefing and thanked for their participation.

**Results**

As ratings for each word were nested with a person, a multilevel modeling analysis was conducted. The null model was first computed to give an indication of how much variance each person could account for. The inter-class correlation (ICC) for this model was  $\rho = 0.01$ , suggesting that participants accounted for 1% of the variance in how active a word was rated. Many methodologists suggest that with low ICCs ( $\rho < .05$ ), multilevel modeling may not be needed and, instead, the data may be analyzed using single-level regression models (e.g., Hayes, 2006; Thomas & Heck, 2001). Therefore, the results of our null model were taken as an indicator of no significant variation across groups, suggesting no clustering.

Using simple linear models, we regressed activity ratings onto ratings of agency, effort, and change. Results revealed a positive relation, with all three variables independently predicting how active or inactive a behavior was perceived. See Table 3 for regression coefficients and standard errors. Results from Study 1, however, revealed that people define action and inaction in complex ways while taking into consideration multiple characteristics simultaneously. Thus, the previous analysis was rerun using a multiple regression model, including all three characteristics measured. This model significantly predicted perceptions of action and inaction,  $F(3, 13) = 84.50, p < .001$ , corresponding to 95% of the variance. But, this time, not all the predictors added significantly

to the model. Instead, only effort predicted perceptions of action and inaction,  $b = 1.20, t(15) = 3.94, p = .002$ . Therefore, although behaviors are spontaneously described in terms of agency and change (Study 1), these dimensions are not integral to predicting whether a behavior is defined as an action or an inaction. Instead, perceiving a behavior as effortful (or effortless) appears enough to understand whether it is an action or inaction.

	B	SE	Beta
<b>Simple regression</b>			
Constant	-0.95	0.66	
Agency	1.20	0.20	0.84***
Constant	-0.43	0.23	
Effort	1.16	0.07	0.97***
Constant	-1.87	0.54	
Change	1.53	0.17	0.92***
<b>Multiple regression</b>			
Constant	-0.45	0.53	
Agency	-0.23	0.23	-0.16
Effort	1.20	0.30	1.01**
Change	0.20	0.28	0.12

*Note:* The slope coefficient represents the change in the dependent variable for a one unit change in the independent variable. B = unstandardized coefficients. SE = standard error. Beta = standardized coefficients.  
\*\*\*  $p < .001$  \*\*  $p < .01$

## Discussion

The purpose of Study 2 was to determine the degree to which different characteristics predicted judgments of action and inaction. Although definitions of action and inaction can be rich (based on results from Study 1), when considering all dimensions of behavior, only effort predicted perceptions of action and inaction. This does not mean that agency and change are not important dimensions in characterizing action and inaction. Rather agency and change both involve effort, and it is this that is reflected in our model.

## STUDY 3

The purpose of Study 3 was to extend the results of Study 2 and replicate the relation of effort as a defining characteristic of action and inaction. In this study, participants were asked to evaluate scenarios on characteristics of agency (purpose) and effort. Based on previous findings, we hypothesized that there would be strong associations between action with effort.

## Method

### Participants

A hundred and thirty-seven undergraduates, recruited from a university subject pool, participated in exchange for partial course credit. The sample included 88 females and ranged in age from 18 to 22 years ( $M = 18.85$ ,  $SD = 1.05$ ). Informed consent was obtained from all participants before proceeding with the study.

### Procedure

Participants were told that the purpose of this study was to explore how people define and understand what it means to be active and what it means to be inactive. Participants were presented with a list of behaviors that were characteristic of action, inaction, or a combination of the two. These included *running, building a house, walking, eating, talking aloud, talking to myself, thinking aloud, thinking quietly, solving an intellectual problem, solving a practical problem, doing math, reading aloud, reading to myself, listening to a lecture, listening to music, watching television, imagining, remembering the past, daydreaming, sitting still, dreaming, and sleeping*. Participants were then asked to rate each behavior on a list of characteristics found to be commonly associated with action and inaction. This included an assessment of how much a behavior was *purposeful* and *effortful*. Each characteristic was measured on a seven-point scale, ranging from 1 (*not at all*) to 7 (*a great deal*). Participants were then given a debriefing and thanked for their participation.

## Results

Simple linear regression models were calculated by regressing activity ratings onto ratings of purpose and effort. Results revealed a positive relation, with both variables independently predicting how active or inactive a behavior was perceived. See Table 4 for regression coefficients and standard errors. As with Study 2, the previous analysis was also rerun using a multiple regression model. This model significantly predicted perceptions of action and inaction,  $F(2, 19) = 10.13$ ,  $p = .001$ , corresponding to 52% of

the variance. However, not all the predictors added significantly to the model. Instead, only effort predicted perceptions of action and inaction,  $b = 0.17$ ,  $t(20) = 2.86$ ,  $p = .01$ . This replicates the results from Study 2, suggesting that effort is a strong predictor of action and inaction, overshadowing the role of agency.

## Discussion

The purpose of Study 3 was to determine the degree to which agency and effort predicted judgments of action and inaction. When considering all dimensions of behavior, only effort predicted perceptions of action and inaction. Overall, the results from this study bolster those from Study 2 to show that effort is the most integral component in how laypeople define action and inaction and distinguish between the two.

## General Discussion

The goals of this paper were to explore the colloquial meanings of action and inaction. Study 1 found that lay conceptualizations of action and inaction overlap with theoretical definitions of action as (a) occurrence versus absence, (b) agentic versus non-agentic, (c) effortful versus effortless, and, to a lesser extent, (d) change versus stasis. However, Studies 2-3 found that, although naïve definitions can be rich, when considering all dimensions of behavior, only effort predicted perceptions of action and inaction. These findings suggest that even though agency and change are important to the definition of action and inaction, effort is paramount.

These findings complement a growing literature on differences between action and inaction in attitude and goal research (Albarracín et al., 2011). Thus far, research in this domain has focused on understanding the effects of priming action or inaction goals on behavior (e.g., Albarracín et al., 2008; Noguchi et al., 2011), while trying to identify differences in individual, religious, and cultural preferences for action and inaction (e.g., Ireland et al., 2015; Levine & Norenzayan, 1999; Zell et al., 2013). Prior studies have shown that both priming action and inaction can lead to changes in behavior, but that people value action and inaction to a different extent. A recent study [Albarracín, 2020] asked participants

Table 4  
Predictors of action ratings using simple and multiple regression analyses (Study 3)

	B	SE	Beta
<b>Simple regression</b>			
Constant	4.15	0.64	
Agency	0.33	0.11	0.56**
Constant	4.96	0.27	
Effort	0.22	0.05	0.68***
<b>Multiple regression</b>			
Constant	4.26	0.55	
Agency	0.16	0.11	0.27
Effort	0.17	0.06	0.54*

Note: The slope coefficient represents the change in the dependent variable for a one unit change in the independent variable. B = unstandardized coefficients. SE = standard error. Beta = standardized coefficients.  
\*\*\*  $p < .001$  \*\*  $p < .01$  \*  $p < .05$

to answer questions about the advantages, disadvantages, and antecedents for action and inaction. Results found that participants were more easily able to recall these characteristics for action than for inaction, indicating that attitudes towards action are better represented. Our findings bolster these results, by highlighting differences in the judgments associated with action and inaction and showing that these two types of behavior are perceived in fundamentally different ways.

However, universal associations between action and effort are unlikely. To begin, much like actions, inactions can be goal-directed, and a large literature on inhibitory control suggests that refraining from risky or detrimental behaviors is intentional and effortful (e.g., Baumeister et al., 1998; Hepler et al., 2012). From this point of view, even though actions may be perceived as more effortful than inactions by default, some inactions are clearly perceived to require effort. Moreover, low effort may not produce low evaluations of inactions when inactions stem from exhaustion or occur without the need for effort (e.g., relaxing). Future work could thus explore possible boundary conditions for this effect.

### Concluding Remarks

In conclusion, the present research found that actions are perceived differently than inactions. Study 1 found that lay conceptualizations of action and inaction overlap with theoretical definitions. Studies 2-3 found that, although naïve definitions can be rich, when considering all dimensions of behavior, only facets of effort predict perceptions of action and inaction. Balancing action and inaction is important for health and wellbeing, underlining the importance of understanding evaluative biases in this domain. As more research accumulates, testing how these definitions influence people's decisions will be important.

### Acknowledgements

Research reported in this publication was supported by the National Institute on Drug Abuse under Award Number DP1 DA048570, the National Institute of Mental Health under Award Number R01MH11847, and the National Institute of Allergy and Infectious Diseases under Award Number R01AI147487.

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