

The Emergence of Action

Daniel M. Wegner
Trinity University

Robin R. Vallacher
Illinois Institute of Technology

Gary Macomber, Russell Wood, and Kevin Arps
Trinity University

People sometimes find themselves doing things that they did not set out to do. The theory of action identification suggests that people will make such discoveries under certain circumstances and then will continue to perform the action as newly understood; new action, then, will be the result. This action emergence phenomenon was investigated in two experiments. Each was designed to test the idea that people would embrace a new understanding of action—an emergent *act identity*—to the degree that this identity provided a more comprehensive understanding of the action than did a previous act identity. In Experiment 1, some subjects were induced to think about the details of the act of “going to college” (e.g., “studying”), whereas others were led to focus on more comprehensive meanings (e.g., “preparing for a career”). Those who concentrated on details were more susceptible to an emergent understanding of the act. They came to agree with an article that suggested that “going to college” results in “improving one’s sex life” or “impairing one’s sex life.” Experiment 2 revealed that emergent identification can be translated into emergent action. Subjects in this study who were induced to think about the details of “drinking coffee”—by drinking their coffee in unwieldy cups—were more susceptible than those who drank from normal cups to a suggested action identification. They came to believe that “drinking coffee” amounts to “making myself seek stimulation” or to “making myself avoid stimulation,” and subsequently followed the suggested action identification by turning up or down the volume of music they were hearing.

Do people know what they are doing? Traditionally, the thinking of psychological theorists on this question has been strongly divided. Some have been impressed with the human capacity to make plans, to verbalize intentions, and to consider possible courses of action, and so have argued that people know what they are doing in advance of each action. This was the way James (1890) framed the role of mind in action, and such ideas have been echoed in many theories since (e.g., Harré & Secord, 1973; Luria, 1961; Miller, Galanter, & Pribram, 1960). Other theorists, however,

have been more taken with the human tendency to err, to stumble blindly into courses of action, and to imagine in retrospect what the action might be. Freud (1914/1960) saw knowledge of action largely as a matter of such “self-discovery,” and theorists since have argued that people can only begin to understand an action once it is complete (e.g., Bem, 1972; Mead, 1938; Ryle, 1949).

In this article, we hope to show how both of these seemingly contradictory views can be correct. For this purpose, we draw on the theory of action identification (Vallacher & Wegner, in press), a theory that suggests that people always have available some conception of what they are doing. The theory indicates that in some cases, an understanding of action arises before the act and continues to be relevant during and after the action. In other cases, however, the conception that was held prior to the action may change. The person may discover that some new identification of the action is more apt and then may set out to

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Requests for reprints should be sent to Daniel M. Wegner, Department of Psychology, Trinity University, 715 Stadium Drive, San Antonio, Texas 78284.

continue the action as newly conceptualized. In this analysis, knowledge of what one is doing may thus contribute to the *maintenance* of old action or to the *emergence* of new action. The interesting issue for this theory, then, is the determination of the conditions under which each of these processes will occur: When is James right, and when is Freud right? To provide a perspective on this issue, we concern ourselves first with the theory of action identification and then with its implications for the nature of action emergence.

The Theory

Action identification theory holds that people do what they think they are doing. The person who is asked "What are you doing?" will typically report one of a variety of potential identifications of the action, and we believe that this report is descriptive of the nature of the ongoing action—in a way that other identifications are not. This immediately available act identity will be the person's principal cognitive representation of the action, and despite the person's knowledge of other identities, will serve as the template for engaging in the action. A person who is questioned while eating, for example, might identify the action as "chewing," as "gaining weight," as "overcoming boredom," or in yet other ways. The identity that is prepotent for the person, however, will guide the action. Thus, the person who thinks of the act as "gaining weight" is in fact likely to be putting on pounds (Wegner, Vallacher, Ewert, Dizadji, & Reno, 1983). The theory holds, then, just as James would have it, that the mind is strongly implicated in the performance of action. To the degree that people identify an action in a certain way, in advance, they will maintain the action with reference to that identification and often wind up doing the action exactly as identified. This idea constitutes the first principle of the theory: *An action is maintained in terms of its prepotent identity.*

Act identities may differ from one another, however, in an important way. The theory goes on to propose that the different identities a person might have in mind for an action can vary in their level in a cognitive hierarchy (cf. Goldman, 1970). Some identities convey the details or mechanics of the action; such lower level identities indicate *how* an action is done.

Other identities convey a more comprehensive understanding of the action; such higher level identities indicate *why* or *with what effect* the action is done. So, for example, "washing the floors" is lower in level than "cleaning the house" because it indicates how "cleaning the house" is done; "preparing for guests," in turn, is higher in level than "cleaning the house" because it describes why or with what effect "cleaning the house" is done. As a rule, an identity A is higher in level than identity B if it makes sense to say that one does A by doing B. With this sort of analysis, all the identities of a particular action can be arranged in an identity structure that stretches from the highest level consequences of the action to the lowest level details. As suggested by the first principle of the theory, a person might set out to do something identified at any one of these levels.

The second principle of the theory suggests that people would prefer to identify action at the highest level possible: *When an action can be identified at both a higher and a lower level, there will be a tendency for the higher level identity to become prepotent.* It is not too surprising, after all, that people would want to be informed of what they are doing in the most comprehensive way. When one performs an action that could be identified as both "throwing dice" and "winning a million dollars," for example, adhering to the lower level identity of "throwing dice" would seem foolish and shortsighted. Higher level act identities inform the person of the contingencies surrounding the act—the things one does by doing the action—and the fullest knowledge of the act inheres in such contingencies. Given a choice between a lower and higher level identity for an action, then, people ordinarily opt for the higher level identity (Vallacher & Wegner, *in press*).

The third principle of the theory indicates that such high-level identities can present problems: *When an action cannot be maintained in terms of its prepotent identity, there will be a tendency for a lower level identity to become prepotent.* If one sets out to "cook a meal," for instance, especially if one is not an accomplished cook, one could very well fail for the simple reason that one cannot perform the action without thinking about some of its details. Frequently, the preferred higher level identities for action must be set aside in favor

of lower level identities that provide representations of how the act can be completed. The unskilled cook, for example, might have to be consciously concerned with "boiling water" or even "finding the kettle" for the act of "cooking a meal" to be completed successfully. The tendency to identify an action at high levels, then, is counteracted by a tendency to identify an action at a lower level when it cannot be maintained in terms of a higher level identity.

The three principles of the theory prescribe a system of dynamic interaction between action and identification. The person attempts to perform action as identified, but because of the attractiveness of high-level identities, the person's "plans" always tend to become more comprehensive and high level. This press toward higher levels is thwarted, however, each time the person sets out to perform the action and finds it cannot be maintained with reference to a high-level identity. The person moves to lower levels to discern how the action can be continued and thus again becomes susceptible to the preference for higher level identities. Over time, then, the identification of action moves in these cycles toward the highest level of identification at which the person can maintain the action.

The Emergence Process

If people generally know what they are doing, as the theory asserts, then how can they sometimes perform behaviors that they did not know they were doing in advance? We believe that such action emergence occurs by way of a particular sequence of events that can be charted through the principles of the theory. The person begins an act with some particular identity (in accord with the first principle); if this identity is too high in level for effective maintenance of the action, the person moves to thinking about the act in terms of a lower level identity (in accord with the third principle); if this lower level identity is effectively maintained, the person moves back to thinking about the act in terms of a higher level identity (in accord with the second principle). This higher level identity, however, is not necessarily the one with which the act was initiated. Emergence of a new high-level understanding of action occurs by way of a transitional state in which the person thinks about some detail of the action.

This sequence is possible because any action has multiple high-level identities, independent comprehensive meanings that can be substituted for one another. When one performs the low-level identity of "opening a door," for example, one might be performing any of a variety of higher level identities. One might be "going to work," "checking for squeaks," or even "letting in fresh air." On "going to work" one morning and finding the door stuck, one might have to think, however briefly, about "opening the door." And in this instant, one would have several options for understanding the action at a higher level. One might fix the door and continue to "go to work." Or, it could be that the rush of air encountered as the door was opened would serve as a reminder that one was "letting in fresh air." Emerging with this higher level identification of the action could conceivably lead one to continue the action in this new direction. It might seem reasonable at this point to "open a window" as well. On moving to a lower level identification of action, one enters a realm of mundane details of action that could have many high-level meanings. From this position, any suggestion of a high-level meaning, even one that is very unlike the initial meaning of the act, could lead one to emerge with a new comprehensive understanding.

Some initial evidence for this hypothesized sequence has been observed in a study of an action that many people realize can change in meaning: the act of "getting married." Wegner, Vallacher, and Kelly (1983, cited in Vallacher & Wegner, in press) asked a number of people to give descriptions of what one does in "getting married" and compiled a list of the 30 most frequently mentioned identities. In a series of telephone interviews, they then asked people who were in various stages of the act of "getting married" to rate the degree to which each of these identities described the act. Factor analysis of these ratings and tests of trends in factor scores revealed an interesting pattern. For respondents questioned a month before their wedding day, "expressing my love" was a compelling identity of the act; a factor composed of this and related identities was strongly endorsed. So, prior to the act, people saw it in terms of a fairly general high-level identity.

For respondents questioned the day before their wedding, however, a factor composed of low-level identities was predominant; here

people noted that they were "hiring a photographer," "getting a special outfit," "saying vows," and the like. In the course of performing the act, then, people could no longer maintain it properly merely by thinking of "expressing love." In line with the third principle of the theory, they concerned themselves with the details of the action. Finally, respondents questioned a month following the wedding were again at high level. Their endorsement of the low-level identities of the act had declined, but they now more often endorsed a new high-level factor: "getting problems." These observations thus illustrate a natural occurrence of the high-low-high sequence that we believe typifies the emergence process. And in a sense, they also illustrate the Freudian conception of the knowledge of action. People appear to "discover" what they are doing when, immersed in the details of the action, they lose sight of the initial meaning of their action and adopt a meaning that makes sense of their current circumstances.

The research reported here was designed to test this conceptualization of action emergence. The "getting married" study, after all, only shows the hypothesized sequence of events, not their causal interdependence. To examine the emergence process in detail, we conducted two experiments. The first was designed to test the idea that people who are led to think about an action at low level become especially susceptible to new high-level identifications of the act. The second experiment tested the emergence process using a different set of operations and, in addition, investigated the degree to which emergent identifications of action are translated into observable changes in behavior. In both studies, a manipulation planned to move subjects to either a high or a low level of identification of a particular action was followed by a manipulation arranged to expose them to a potential new high-level identity of the act. Measures of the adoption of this new high-level identity served as the dependent variables of interest.

Experiment 1

In this study, we examined the possibility that college students might be led to embrace an emergent identification of the act of "going to college." Our plan was to vary initial iden-

tification level by asking each student to make a list of the identities of the act. Some were asked to list high-level identities, what one does *as a result of* going to college. Others were asked to list low-level identities, what one does *as a part of* going to college. Then, both groups were exposed to a rather far-fetched, potential high-level identity of the act. Some read an article claiming that "going to college" has the effect of "improving one's sex life"; others read an article making the opposite claim, that "going to college" results in "impairing one's sex life." Measures of belief in these articles were then used to assess the degree of emergence in each of the experimental conditions. We thought that belief in such unusual claims would provide a fairly stringent test of the power of the emergence process.

Method

Subjects and design. Sixty-one undergraduate students (29 females and 32 males) participated in exchange for extra credit in their introductory psychology classes at Trinity University. They were randomly assigned to the conditions of a 2×2 factorial design with prior identification level (high vs. low) and target emergent identity ("improving my sex life" vs. "impairing my sex life") as the independent variables.

Procedure. Subjects came to the laboratory in small groups and were each assigned to one of the four experimental conditions through the random distribution of experimental booklets. The booklets were designed to provide both the manipulations and a measure of resulting emergence. Each booklet began with a page arranged to serve as a manipulation of prior identification level. Subjects in the high-level conditions were asked to make a list of the things they do as a result of going to college, whereas subjects in the low-level conditions were asked to make a list of the things they do as part of going to college. Both groups were encouraged to list as many identities as they could, up to a limit of 20.

The next page of the booklet constituted a check on the effectiveness of this manipulation. The subject was asked to rate each of 10 identities as to how well it described the act of "going to college." These identities had been gathered from a sample ($n = 10$) of undergraduate students' free descriptions of the act and were arranged to include 5 low-level identities ("reading textbooks," "sitting in classrooms," "walking around campus," "studying," and "taking notes in class") and 5 high-level identities ("becoming independent of my parents," "improving my chances of getting a job I want," "missing more exciting things," "spending money," and "getting in on college social activities"). Ratings were recorded on 7-point scales anchored at the extremes by *describes very poorly* (1) and *describes very well* (7).

On the next page of the booklet, the opportunity for emergence was presented. Subjects encountered a short article that was attributed (falsely) to *The New York Times*.

It began: "*Washington, D.C.* In a recent study at the National Institute of Mental Health, researchers found that a college education significantly affects a person's future sex life." The article continued, then, in differing versions depending on the subject's target emergent identity condition. For those to be encouraged to think that college attendance improves one's sex life, the article said, "Dr. Ernest Wolfram discovered that college graduates have sex more frequently and report greater enjoyment of sex than do similar individuals who have not attended college." It went on to indicate some of the details of the (fictitious) research and to proffer several quotes from Dr. Wolfram on the likely explanation for this observation. For subjects in the contrasting experimental condition, the article explained that college graduates have sex less frequently and report less enjoyment than do similar people who have not attended. The accompanying details and quotes brought this version to the same overall length (175 words) as the other version.

The final page of the booklet contained the measures of emergence and was the same for all subjects. Amidst a series of Likert-type rating items on several aspects of college life, three key items were embedded that were intended to tap subjects' belief in the article they had seen. Ratings of agreement on 1-7 scales were requested for these items: "The results of Dr. Wolfram's study seemed to be accurate," "I think Dr. Wolfram's findings are true for students at Trinity," and "Following college, I expect my sex life will be about the same."

Results and Discussion

Manipulation effectiveness. We introduced the identity-rating check on the listing manipulation to determine whether the low- and high-level identification states induced through the listing task were durable enough to be reasonably understood as causes of subsequent emergence effects. To make this determination, we began by forming indexes of low-level and of high-level identification by summing the ratings of the relevant identities for each subject. The index for low-level identification proved reliable (Cronbach's $\alpha = .80$), whereas the index for high-level identification did not ($\alpha = .33$). This is typical of a finding observed in other studies: Low-level identification is unidimensional, whereas high-level identification is multidimensional (e.g., Wegner et al., 1983). For this reason, in this research and elsewhere, we have depended on a low-level index as the best indicator of the subject's overall level in an identity hierarchy.

By the low-level index, the manipulation was effective. Mean low-level identification (on the index that could potentially vary from 5 to 35) was 26.8 for the low-level prior identification group and 23.8 for the high-level

prior identification group. In a 2×2 analysis of variance (ANOVA) corresponding to the study design, the main effect for prior identification level was significant, $F(1, 57) = 4.65, p < .05$, and other effects were not. Thus, the listing manipulation led subjects to persist in identifying the action of "going to college" at the level to which the manipulation was directed.

Belief in the article. The three Likert-type items were significantly correlated (with the third item reversed, mean $r = .39$) and behaved similarly across conditions. So, they were summed to yield an overall index of belief in the article. The mean levels of belief in the four conditions are shown in Table 1.

As the theory predicts, belief in the article was greatest for those subjects in the prior low-level identification groups. In a 2×2 ANOVA, the effect of prior identification level was significant, $F(1, 57) = 4.99, p < .05$, whereas no other effects reached significance. We might note also that in a separate analysis that included sex of subject as a factor, no significant sex main effect or interaction was observed. So, for both males and females, and across target identities that are optimistic ("improving") and pessimistic ("impairing"), low-level identification of "going to college" was sufficient in this context to promote a change in subjects' overall conceptions of what they were doing. Thinking about an act at low level and then encountering a stimulus to high level can lead people to move toward entirely opposite understandings of the same action.

This conclusion was also supported by a correlational analysis of the relation between initial identification level and target identity emergence. Across all subjects, the low-level index used as the manipulation check was significantly correlated with the measure of belief, $r(59) = .27, p < .05$. To the degree that subjects initially identified "going to college" in terms of its details, they adopted the suggested emergent identity. The high-level index, in turn, was not significantly correlated with the belief measure; perhaps the expected negative correlation was attenuated by the unreliability of the high-level index.

The results of this experiment, in sum, lend support to the action identification analysis. People led to concentrate on the minutia of action, in contrast to those led to think about the consequences, were more inclined to agree

Table 1
Experiment 1: Mean Belief in the Article

Target emergent identity	Prior identification level			
	High	<i>n</i>	Low	<i>n</i>
Improving my sex life	10.9	15	11.9	15
Impairing my sex life	8.3	15	11.4	16

Note. The belief measure could vary from 3 to 21, with greater values indicating greater belief in the article.

with a communication indicating that their action might have an odd new meaning. Still, these results must be viewed as less than entirely conclusive regarding the value of the present theoretical analysis. It is possible to argue, for example, that commitment theory (Kiesler, 1971) could provide an account of the same effects. Although that theory obviously does not distinguish between levels of action identification, one could propose that asking subjects to list high-level identities has the effect of committing them to these to the degree that a subsequent suggestion of a high-level identification would be rejected. This interpretation depends on the idea that subjects listing low-level identifications, and so becoming committed to them, do not see the suggested high-level emergent identity as a challenge to their earlier commitment. Thus, low-level subjects might have accepted the emergent identity because of their lack of prior commitment to any high-level identification. Because the present experiment did not contain conditions in which subjects made no lists, and so remained uncommitted to any identification of their action, this interpretation cannot be ruled out. However, Experiment 2 provides an empirical assessment of the action identification theory predictions in a setting devoid of commitment implications.

Experiment 2

This experiment was arranged to examine whether the act of "drinking coffee" might emerge as something quite different—the act of "making myself seek stimulation" or the act of "making myself avoid stimulation." For this purpose, we arranged for subjects to drink coffee in the lab. Some subjects were given coffee in familiar cups, ones we had borrowed

from the campus cafeteria. Others, however, were given their coffee in special cups, ones designed to disrupt their action and to induce them to think about it at lower levels. Then, we gave both groups biased questionnaires (cf. Salancik & Conway, 1975) planned to lead them toward one or the other of the two opposing high-level identities of the act. One questionnaire asked subjects to indicate the degree to which coffee made them seek out stimulation; the other asked the degree to which coffee promoted the avoidance of stimulation. All subjects were then given the opportunity to seek or to avoid stimulation—by turning up or down the volume of music they were hearing. Our expectation was that subjects given disruptive cups would be responsive to the biased questionnaire and so would adjust their listening volume in the direction the questionnaire had suggested.

This study was planned, then, to move beyond the findings of Experiment 1 in two ways. First, it would test not only emergent action identification but also the emergence of new action. Second, because subjects in this study would not be exposed to any procedure that might promote commitment to their action identifications, this research held promise for establishing the operation of action identification processes apart from the processes of commitment.

Method

Subjects and design. Forty undergraduate students (26 female and 14 male) who reported drinking coffee daily participated in exchange for extra credit in their psychology classes at Trinity University. They were each randomly assigned to a cell of the 2 (high vs. low prior identification level) $\times$ 2 ("seeking stimulation" vs. "avoiding stimulation" target emergent identity) factorial design.

Procedure. Each subject arrived at the laboratory and was informed that the study was concerned with the physiological effects of coffee. The subject was given a cup of coffee and was offered cream and sugar. The experimenter mentioned that the particular cups being used were especially safe for use near electrical equipment. For some subjects, this was a standard coffee cup with saucer. For others, the cup was fastened securely atop a tin can that had been filled with rocks. These disruptive cups stood some 20 cm high, weighed 0.5 kg, and were designed to be unwieldy. The subject was asked to drink the coffee as the experimenter busied himself setting up an array of physiological recording equipment. Although subjects were not informed, decaffeinated coffee was used in all cases to eliminate any special effects resulting from caffeine-induced arousal. As the subject finished the coffee, the

experimenter attached several sensing electrodes to the subject's nondominant hand.

The experimenter then asked the subject to complete a preliminary questionnaire. This was called the "effects of coffee" rating form and served as the manipulation of target emergent identity. The form required all subjects to rate a set of statements on the effects of coffee as to how certain they were that each effect occurred for them. Subjects in the "seeking stimulation" condition rated their certainty of each of 17 statements indicating that coffee increases stimulation seeking (e.g., "Coffee makes me want to go out and do things," "Coffee makes me want to do things that will shock my senses," etc.). These ratings were on 5-point scales from *certain* (5) to *uncertain* (1). Subjects in the "avoiding stimulation" condition, in turn, rated a parallel set of statements suggesting that coffee decreases stimulation seeking (e.g., "Coffee makes me avoid going out and doing things," "Coffee makes me want to do things that soothe and calm me," etc.). In both questionnaires, then, subjects were not given much chance to deny the alleged effects of coffee. Also, in both questionnaires, we embedded items that provided specific cues to the idea that the control of music volume would be a good way to express the emergent identity. Subjects in the "seeking" condition rated their certainty that "Coffee makes me enjoy loud, exciting music," whereas subjects in the "avoiding" condition rated their certainty that "Coffee makes me prefer soft, restful music."

When the subject had completed this form, the experimenter explained that the physiological measurements were soon to begin. He noted that his interest was in reactions to a standard stimulus—an interval of recorded music—and that the subject would soon be listening to this. The subject was given a set of headphones and was told to adjust the volume on these by means of a control knob in easy reach. The experimenter said that he would begin the music at a random volume setting and that the subject was to adjust this to a "comfortable listening level." Then, the subject was just to relax as the physiological measurements were being taken. The prerecorded music varied considerably in recording level, and over 85% of the subjects made one or more adjustments in the playback volume. Each subject's preferred volume level was recorded surreptitiously at 5 standard points in the 8-min session, and the mean setting for the subject served as the primary dependent measure.

Results and Discussion

Effectiveness of manipulation of prior identification level. Do unwieldy cups make people think about "drinking coffee" at lower levels of identification? Although this link is an important one in the present experiment, we believed that inserting a check in this context might serve to commit subjects to certain identities. Thus, we examined the effectiveness of the normal versus disruptive cup manipulation of prior identification level in a separate study. Thirty-two undergraduate student volunteers were invited to drink coffee in small

groups using either normal or disruptive cups and then were asked individually to identify the act of "drinking coffee" by rating 30 identities (provided by an earlier subject sample) on 1–7 scales as to how well each described what was done. A factor analysis (with varimax rotation) of all subjects' ratings revealed five factors that together accounted for 65% of the variance in ratings. The first factor contained seven lower level identities (e.g., "putting a cup to my mouth," "swallowing," etc.), and the remaining four factors represented different higher level identifications of the act. With a .40-item-loading criterion, these included "getting nervous" (three identities), "becoming alert" (three identities), "satisfying my need" (three identities), and "promoting my caffeine habit" (two identities).

This array of factors allowed us to perform a somewhat more exacting check on the manipulation than that performed with the smaller set of identities used in Experiment 1. Specifically, we computed a score on each factor for each subject. This was the sum of the subject's ratings of the identities loaded on a factor divided by the sum of the subject's ratings of all identities loaded on all factors. These indexes were chosen, in lieu of simple summed ratings, to reduce the impact of an agreement response style on subjects' scores. Because the act identities people usually volunteer are worded positively, the tendency to agree with any statement impinges on subjects' ratings of every identity. To avert this potential artifact, the identification factor indexes were computed as measures of the *relative* endorsement of the identities on each factor.

By such an index, low-level identification was significantly greater for subjects with disruptive cups ($M = .55$) than for those with normal cups ($M = .43$), $t(30) = 2.79$, $p < .01$. And as would be expected, disruption produced decrements in the high-level indexes. Identification of the act as "getting nervous" was reduced from .13 to .07 as the result of disruption, $t(30) = 2.84$, $p < .01$, and identification of the act as "promoting my caffeine habit" was reduced from .12 to .08, $t(30) = 2.74$, $p < .01$. The other high-level indexes also showed attenuations as a consequence of disruption but not significantly so. It might be noted that an analysis using simple summed ratings produced comparable findings. Overall,

then, it can be concluded that the disruptive coffee cups increased low-level identification and reduced high-level identification.

Endorsement of the "effects of coffee." In a sense, the leading questionnaire can be understood as a measure of the emergence of action identification. That is, although it was designed as a manipulation and not as a measure, like the belief indexes reported in the previous study it may tap the emergence of the target act identity. Looking first at overall ratings of certainty of the "effects of coffee," we find that an ANOVA corresponding to the study design revealed no significant effects. Mean certainty was greater in the low-level conditions, as expected; but perhaps because many of the items on the form were stated in the extreme to serve as manipulations (e.g., "Coffee makes me want to smell strong odors") and so drew little endorsement, the effect of prior identification level was not reliable. It is instructive, though, to look at the ratings of the items that were uniquely relevant to the final dependent variable—certainty that coffee "makes me enjoy loud, exciting music" or "makes me enjoy soft, restful music." When certainty of the item relevant to the subject's target emergent identity condition was treated as a dependent variable in a 2×2 ANOVA, there occurred a tendency for higher certainty in the low-level condition ($M = 2.43$) than in the high-level condition ($M = 1.74$), $F(1, 36) = 3.18$, $p < .09$. Like the subjects in the previous study, those in the present experiment who were prepared for emergence through exposure to a low-level stimulus became prone to endorse a suggested emergent identity.

Volume settings. Means for the volume level measure of emergent action are shown in Table 2. These volume setting means could vary from 1 (*very soft*) to 7 (*very loud*). The 2×2 ANOVA on these indicated a significant interaction of prior identification level and target emergent identity, $F(1, 36) = 8.16$, $p < .01$, and a subsequent set of planned comparisons revealed that the means fit the expected pattern. Subjects in the low-level "seeking" condition were expected to listen at high volume, and their mean setting was indeed higher than that of subjects in the low-level "avoiding" conditions, $t(36) = 2.40$, $p < .05$. The mean volumes in these low-level conditions also differed from the comparable means

Table 2

Experiment 2: Mean Music Volume Settings

Target emergent identity	Prior identification level			
	High	<i>n</i>	Low	<i>n</i>
Seeking stimulation	4.22	10	5.47	8
Avoiding stimulation	5.20	9	4.03	13

Note. The volume setting could vary from 1 to 7, with higher values indicating greater volume.

in the high-level conditions. The "seeking" subjects at low level set the volume higher than did "seeking" subjects at high level, $t(36) = 2.08$, $p < .05$, and the "avoiding" subjects at low level tended to set the volume lower than did the "avoiding" subjects at high level, $t(36) = 1.96$, $p < .06$. High-level subjects did not differ significantly between the "seeking" and "avoiding" conditions.

These findings provide support for our analysis of action emergence. Subjects in this study who were moved to a low level of identification of "coffee drinking," by virtue of an odd coffee cup, and who were then exposed to a subtle manipulation arranged to suggest a new high-level identification of the act were indeed affected by this procedure. Initially, they tended to agree more with the suggested identity. And then, they enacted the target emergent identity when an opportunity became available. Those for whom the new high-level identity was "making myself seek stimulation" proceeded to seek out stimulation by turning up the amplitude of music; those for whom the new high-level identity was "making myself avoid stimulation" proceeded to avoid stimulation by turning down the amplitude. Emergent identification of action, it seems, can be translated into emergent action.

General Discussion

These experiments show that when people come to think about the details of their action, they become particularly impressionable about the overall meaning of what they are doing. A new understanding of the action can emerge, and this understanding can then lead to the development of new action. We believe that this action emergence phenomenon is pertinent to many of the instances of behavior

change that are observed in everyday life. To gauge the wisdom of this generalization, however, it is important to scrutinize the phenomenon in two ways. First, we should consider the likely limits of the effect; under what conditions does emergence occur? Second, we should concern ourselves with the place of action identification in processes of behavior production more generally; what does this theory contribute to the psychological understanding of the role of thought in action?

The Scope of Action Emergence

Taken together, the results of these experiments offer several clues about the conditions under which people will come to an emergent understanding of their actions. The two most critical conditions, of course, are the ones that were manipulated in both studies: (a) the stimulus to low-level identification, followed by (b) the suggestion of a relevant high-level identity. Experiment 1 showed that these conditions were sufficient to promote emergent identification. Experiment 2 demonstrated once more the operation of the two conditions in the production of emergence, this time with a very different set of concrete procedures used to precipitate the conditions. Because subjects in this second study were not called on to report their action identifications prior to the suggestion of the new high-level identity, we can be fairly certain that these conditions, not processes of commitment, were responsible for the observed emergence effect. So, although yet other alternate explanations are possible and additional research is surely needed to establish the parameters of the observed phenomenon, the evidence to this point suggests that emergence can be demonstrated under a clearly circumscribed set of laboratory conditions.

We believe these conditions commonly produce emergent action in everyday life. Requests to make a list of act identities or to drink from an unusual cup do not, of course, come up very often, but a variety of kindred pressures to low-level action identification are experienced in natural settings. Perhaps most frequently, people simply find that they cannot do what they had in mind to do before beginning the action. The person planning to "express love" by getting married, for example, finds that the act of "expressing love" is con-

siderably more complicated than it looks from a distance. In this and other cases, people find they cannot maintain an act as initially conceptualized, and they turn, therefore, to thinking about how to continue. Lower level identities of the act are sought to serve as guides. At this point, people do not need to encounter a carefully worded article or leading questionnaire to suggest to them a new high-level identity for the act. We suspect that the low-level understanding of action is sufficiently lackluster and devoid of meaning that people tend to escape from it in any way possible. The slightest hint coming from memory or from simple observation can serve to unleash a high-level identification. The potential high-level meanings of an action are usually many, and each of these provides a possible avenue of emergence.

There is another limiting condition for these effects that is worth noting. Results of the kind observed in these experiments should be obtained most strongly with individuals who are familiar with the action. People who are familiar with an action are likely to have developed sufficient skill or "automaticity" in the performance of the act (cf. Bryan & Harter, 1899; Kimble & Perlmutter, 1970; Langer, 1978) that their thoughts about the act rarely descend to lower levels. Thus, when the stimulus to low level is delivered, their previous high-level conception of the act will be dissipated and a new high level can be substituted that will be maintained. The novice at an action, it has been found in several investigations (Wegner et al., 1983), is usually thinking about the act at low levels. Such a person might not be much affected by a stimulus to low level, and indeed, such a person should already be prone to emerge with a high-level understanding. However, because the novice cannot maintain the act at a high level of identification, this person's experience of emergence may be brief. It was for this reason that we included in the present experiments subjects who were at least moderately experienced with the action (i.e., college students for "going to college" and coffee drinkers for "drinking coffee"). Subjects with no experience at all might have shown little response to our low-level identification induction and, on emergence at high level, might have displayed only a fleeting grasp of the new high-level identity.

The emergence process, in this light, is particularly apt for changing behaviors that are highly practiced and habitual. Many behavior problems fall into this class, and people who have these problems are notoriously difficult to persuade of the problematic nature of their behavior. Telling heavy smokers that they are in the process of "killing themselves," or informing alcoholics that they are "destroying brain cells," it should be remembered, is typically an exercise in futility. Because familiar actions are ordinarily maintained with high-level identifications, offering the person alternative high-level identities amounts to asking the person to accept new meaning for action before the old meaning is gone. With the emergence procedure, it seems possible to erase for a moment the person's preconceived high-level identification for such problem behaviors and so to open the way for new and perhaps more adaptive understandings.

The Role of Thought in Action

The emergence process provides a useful perspective on the role of mind in action. In essence, the findings of this research can be interpreted to say that people are always aware of what they are doing—before, during, and after action. These ways of knowing action may very well differ from one another, and all are likely to be incomplete in contrast to the full array of identities that are available for describing an act, but they stand as knowledge of action nonetheless. This analysis contrasts, of course, with the Jamesian view of action understanding and with the Freudian view as well. At the same time, it offers an interesting counterpoint to each.

As we have noted, James wrote primarily about the possibility that people know what they are doing in advance of each action. He did not specify, however, where this knowledge comes from, and at the extreme, his analysis could be interpreted to mean that such knowledge is wholly unconstrained. Each new act could conceivably come from the farthest stretches of the imagination, limited only by the person's capacity to "think up" new courses of action. The action identification theory view of this process, in contrast, suggests an important limit on what people will set out to do. We believe that people typically set out

to do things that they know they can do. They may engage in actions that have previously been initiated and maintained with a particular identity, or they may engage in actions that have come to have an emergent identification in the course of their performance. With these sources of identities for new action, the person is always in a position to attempt to perform actions that can in fact be done. The cognitive effort that people put into understanding past action—through justification, the discovery of "hidden motives," or simple reinterpretation—is thus not wasted. The emergence of act identities provides a selection of performable plans for action, and so brings the Jamesian person back from the edge of imagination to a realm of workable and useful act knowledge.

The Freudian view of act knowledge might also be expanded. Because Freud held that action was frequently known only in retrospect, he found it necessary to posit an extremely "smart" system of unconscious motives that could plan out and do all the intricate things that people often only discover they have done after the fact. Psychologists since have often accepted some form of this idea, but have hesitated to imbue the unconscious with such tremendous intellect (e.g., Zajonc, 1980). In our view, the unconscious is "smart" because it is simply forgotten consciousness. People may set out to do something with a particular act identity, and the identity might guide action for but an instant. They may then continue to act in a variety of low-level identifications, maintaining in some respects the general plan with which they began but failing to know in a high-level way what is being done. The psychoanalyst's provision of "insight" into the unconscious motives of the act, then, could be merely a rediscovery of the high-level identity with which the act was undertaken. Or, and perhaps just as likely, the "insight" could be an emergent identification that makes sense of the low-level details of the act but that misses the initial high-level identity of the act entirely.

In a way, then, the action identification theory account of emergence adds something to each of its constituents—the Jamesian view and the Freudian view. This is fitting, for *emergence* is a term traditionally used in science and philosophy to refer to a transformation in which the whole comes to have a

new meaning, untraceable to its parts. Action emergence occurs when people are led to consider the parts of their action, and these parts are then put together into a new whole.

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New Journal on Aging: Call for Nominations

By action of APA's Publications and Communications Board and Council of Representatives, the APA is publishing a quarterly journal called *Psychology and Aging*, the first issue of which will appear in 1985. *Psychology and Aging* will contain original articles on adult development and aging. The articles may be reports of research or applications of research, and they may be biobehavioral, psychosocial, educational, methodological, clinical, applied, or experimental (laboratory, field, or naturalistic) studies. For more information about the new journal, see the November issue of the *APA Monitor*.

Nominations for the editor of *Psychology and Aging* are now open. Candidates must be members of APA and should be available to start receiving manuscripts in mid-1984 to prepare for issues published in 1985. To nominate candidates, prepare a statement of one page or less in support of each candidate. Submit nominations no later than April 2, 1984, to:

Martha A. Storandt
Department of Psychology
Box 1125
Washington University
St. Louis, Missouri 63130
(314) 889-6508