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Publication Date

2017-06-01

DOI

10.1016/j.cobeha.2017.05.007

Peer reviewed



HHS Public Access

Author manuscript

Curr Opin Behav Sci. Author manuscript; available in PMC 2018 June 01.

Published in final edited form as:

Curr Opin Behav Sci. 2017 June ; 15: 58–61. doi:10.1016/j.cobeha.2017.05.007.

Mixed Emotions Across Adulthood: When, Where, and Why?

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Abstract

Psychologists often interpret mixed emotional experiences, defined as experiencing more than one emotion over a given period of time, as indicative of greater emotional complexity and more adaptive functioning. In the present paper, we briefly review studies that have examined these experiences across adulthood. We describe how mixed emotions have been defined in the lifespan literature, and how the various studies examining age differences in this phenomenon have yielded discrepant results. We then discuss future research directions that could clarify the nature of mixed emotions and their utility in adulthood, including the assessment of situational context, understanding when mixed emotions are adaptive in daily life, and determining how cognitive functioning is involved in these experiences.

Laughing through tears. Anger with a tinge of sadness. The ability to experience several feelings simultaneously is captured by terms such as poignancy, nostalgia, and ambivalence (see [1**]). Emotion researchers discuss the meaning and utility of these mixed experiences; question the cognitive resources necessary to perceive and accept paradoxical experiences; and ponder whether these experiences are evoked by exposure to more multifaceted life events. Amidst these questions, a subset of studies has also examined whether and how these experiences vary systematically with age. Researchers approach this topic from a variety of theoretical perspectives, capture mixed emotional experience using diverse methods, and make different interpretations regarding the functional nature of these experiences. In this paper, we discuss current theory and research regarding age differences in mixed emotional experiences. After we review this small but growing literature, we then offer suggestions about how we should interpret these findings and design future studies to move this research forward.

Definition and Operationalization of Mixed Emotional Experience

People often report the existence of mixed emotion states [1**]. The operationalization of mixed emotional experiences varies across studies, but most use one of three definitions: a)

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the covariation of positive and negative emotions; b) the co-occurrence of multiple emotions of the same valence; and c) the number of emotion groups, or factors, needed to capture a person's daily affective experience. Each of these definitions, in turn, is associated with theories about the function of these complex experiences.

Theoretical explanations for the covariation of positive and negative emotions

The dynamic model of affect (DMA) describes how positive and negative emotions covary in daily life. DMA states that positive and negative emotions are relatively independent of each other on any given day, but become more polarized, and predominantly inversely related, during times of stress [2]. DMA further states that people who are better able at distinguishing between positive and negative emotions and who experience more positive emotions during distressing experiences are more resilient and recover more rapidly from loss, a finding supported in the literature (e.g., [3]).

Two additional theories have discussed how emotion covariation may change with age. According to the theory of dynamic integration, acknowledging both positive and negative affective aspects of a situation reflects the ability to view issues from multiple perspectives, to tolerate these complex and conflicting feelings, and to engage in more sophisticated, dialectical reasoning about the issue at hand [4]. This life-span theory states that the ability to engage in this complex processing increases with age until midlife, at which time it begins to decline along with other cognitive reasoning skills. Although dynamic integration focuses on evaluating specific situations more than daily emotional experiences, researchers have applied this theory when discussing the context of daily emotional life [5]. Socioemotional selectivity theory presents a different viewpoint, positing that ending conditions (such as a graduation or attending a colleague's retirement party) elicit mixes of positive and negative emotions [6*]. According to this theory, situations such as these are posited to occur more often with age, indicating that co-occurring positive and negative emotions may occur more frequently in later life, as well.

Empirical studies examining age differences in positive and negative affect covariation

Studies of age differences in how people perceive and experience the covariation of positive and negative affect have yielded mixed results. For example, in one study where younger and older adults viewed faces and interpreted the emotions the faces conveyed, older adults used a greater number of emotional descriptors, demonstrating appraisals of greater emotional complexity than younger adults [7]. Similarly, a momentary-sampling study, which included adults ranging from 18 to 94 years, found that older age was related to greater co-occurrence of both positive and negative affect [8]. Moreover, a longitudinal follow-up found age-related increases in co-occurring positive and negative emotional experiences in daily life [9*]. In contrast, other momentary sampling studies, one including adults 18 to 89 years-old [10] and another with adults 23 to 90 years-old [11], found no age differences in the covariance of positive and negative affect. Still another cross-sectional study found less emotion covariation with age [12*]. This final study observed that people reported experiencing positive emotions in the vast majority of sampling periods (97%), but experienced negative emotions primarily when daily stressors occurred. According to findings from this study, the covariation of positive and negative emotion in daily life

generally reflected times of stress. Older adults reported stressors less often in this study, which was also related to them reporting less covariation of positive and negative emotions.

Mixed emotion within valence

A second approach for assessing mixes of emotional experience focuses on emotion differentiation within a single valence. Consistent with dynamic integration theory, some researchers consider a mix of emotions within a single valence as a more cognitively complex experience, where people are able to perceive and evaluate situations from multiple perspectives (e.g., [13]). Taking this idea further, other researchers propose that the ability to precisely distinguish between simultaneously experienced emotions of the same valence is most adaptive. This ability, referred to as emotional granularity, is thought to represent a finely honed response, and has been related to better coping styles and more adaptive behaviors (see [14*] for review).

Researchers have found age differences in mixed same-valence experiences both in the laboratory and in daily life. For example, in a laboratory study where people watched scenes of injustice, younger adults reported experiencing one dominant emotion in response (disgust), whereas older adults reported experiencing equally high levels of three negative emotions (anger, contempt, disgust; [15]). In studies of daily emotional experiences that focus on experiences within a single valence, however, findings are mixed. In one study, age was related to a greater mix of emotions within a single valence (study 1, [16]), but was unrelated in another study examining momentary reports of emotions five times each day across five days [11].

Factor Components

For studies with multiple time points, such as daily diary studies or momentary samples taken multiple times a day across a week or longer, researchers have used factor analysis to calculate the number of factor components necessary to capture a person's emotional experiences. If, for example, a person experiences all emotions along a continuous positive/negative continuum, where levels of positive emotions (joy, contentment, amusement) are experienced to the same extent--and in an inverse proportion to levels of negative emotions (anger, sadness, fear)--their emotional life would be captured by one factor. If emotions are experienced in a differentiated pattern, similar to the granularity mentioned above, a greater number of factors would be needed to capture these distinct experiences. Research examining age differences in factor components for memory and daily experiences has yielded discrepant findings. Cross-sectional [8] and longitudinal [9] studies show age-related increases in factor components, whereas other studies find no age differences ([10]; [11]).

Summary and Recommendations for Future Research

Thus far, research does not offer a convincing argument for systematic age differences in mixed emotional experience. Yet, these studies do uncover important information pertaining to how we should approach the study of mixed emotional experiences, and what this information may reveal about a person's daily life. Below, we mention these points as they

pertain to general studies of emotion, and particularly when studying this topic using a life-span perspective.

Responding to what, exactly?

Emotions evolved to enable us to respond appropriately to a changing environment. Emotional experiences, then, are the signature of what has produced them, whether these elicitors are random neuronal firings, our thoughts, or the events and environment around us. Studies that have examined the context of emotional experience find that differences in emotional elicitors, such as daily stressors, are responsible for age differences in mean levels of negative emotions [17], the variability of negative emotions throughout the week [18], and the co-occurrence of positive and negative affect [12*]. Given that emotions do not occur in a vacuum, taking into account the context of daily life is necessary to understand mixed emotions, their adaptiveness, and how they relate to aging. Moreover, it is important to examine in daily life the types of situations that engender the greatest mixes of emotions. For example, researchers have discussed that age is related to greater mixes of emotions when the situation primes an ending [6*], but no studies to date have examined when and how often people experience these types of situations in their daily lives.

The contexts where mixed emotions are adaptive...or not

Most of the theories and research mentioned above presume that mixed emotions are related to better outcomes than the experience of simpler and more homogeneous emotion states. For example, one study found that reports of simultaneously positive and negative experiences were related to fewer long-term declines in physical health [19*]. Yet, research on social relationships finds that emotionally ambivalent relationships – those that elicit both positive and negative emotions – are related to even worse well-being outcomes than purely negative relationships. In one study, for example, ambivalent ties were related to a marker of accelerated aging (shorter telomere length), but purely negative or positive ties were not [20]. Reporting that a social experience elicited co-occurring positive and negative emotions, then, may not be the ideal outcome. Thus, more work is needed to determine whether mixed emotional experience is always related to better outcomes. To do this, it is necessary to determine what engenders these mixed experiences in daily life, what types of mixed emotional experiences people prefer and which ones they avoid, the time course during which these emotions are experienced, and how these experiences vary by age.

The importance of timing

In addition to examining what elicits mixed emotions in daily life, the timing used to characterize them may play a critical role in their adaptiveness. For example, some researchers believe that experiencing a diverse set of emotions throughout the day (as opposed to in a single moment) represents a healthy response to the environment [21]. This was illustrated in one study revealing that younger adults who reported experiencing a greater number of emotions within each valence throughout the day (termed emodiversity) reported lower levels of depression (in study 1) and also reported visiting their physician less often (study 2) compared to people who reported less diverse emotional experiences [21]. These results once again raise the question of context—that is what elicited these emotions.

Do these findings represent a busier life, more diverse social roles, or greater engagement with the same type of activities as someone with less emodiversity?

The importance of timing is further illustrated in research that examines the nature of shifting valences in mixed emotional experiences. For example, some researchers discuss how feeling one emotion (often negative) followed rapidly by a positive emotion is more effective for regulating distress than feeling emotions of the same valence simultaneously [22]. Yet, even momentary sampling studies may fail to differentiate among these types of experiences, as it is difficult to capture the small but critical time sequences of these mixed experiences. Moreover, it may not be complex emotional experiences, but the phenomenon of placing a positive spin on an otherwise negative event, that we are capturing in our research. Thus, it is important to measure not only emotional experience in response to an event, but also one's cognitive reaction and appraisal to it.

Not just context, but cognition

Previous research indicates that the environment plays a critical role in eliciting mixed emotions, but cognitive functioning is also important to consider. In laboratory studies where people are asked to write about their lives, those who describe themselves using more mixed emotions also score higher on measures of ego levels and education (see review [4]). Similarly, people who have a richer emotional vocabulary may describe their experiences with greater complexity, and use a greater number of emotion descriptors to identify their feelings. In contrast, declines in cognitive functioning are thought to decrease the ability to integrate contrasting emotional experiences [4]. Thus, cognitive ability may be directly related to the experience and description of emotional states. Further evidence of this is apparent in studies showing that experiencing chronic stress or overloads may overwhelm a person who is experiencing a stressor, making them less likely to experience positive emotions during these difficult situations [23]. Combined, this research suggests that people need the cognitive ability to integrate disparate emotional experiences together, and that they must not be so overwhelmed by anxiety or chronic stress that they are unable to engage in reasoning and the exploration of these emotions. Thus, in the study of aging, it is essential to understand the effects of atypical cognitive decline as well as the role of acute and chronic stress in predicting the experience of mixed emotions in later life.

Conclusion

In sum, the growing literature on how the experience of mixed emotional states varies across adulthood has thus far yielded mixed results. Yet, the inconsistent findings also point to directions for future study. Findings suggest that rather than study emotions without context, it is necessary to study the environments and thoughts that evoke these experiences, how these factors vary systematically (or not) at different ages, and the individual characteristics, such as cognitive functioning, that can enhance or hinder these experiences. Finally, researchers need to clearly track the time course of these emotions, to investigate whether these emotions are truly felt at the same time, or in sequences, where the last emotion felt is most important. The complexity of these experiences requires complex methods and

approaches, and providing the context for these experiences will greatly enhance the study of mixed emotional experiences.

Acknowledgments

This work was supported by National Institute of Aging and the National Institutes of Health by grants awarded to Susan Charles (R01AG042431) and to Jennifer Piazza (1R03AG047955).

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between the different emotions one is feeling at a given time is thought to be linked to more adaptive functioning.

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Highlights

- ‘Mixed emotions’ refers to the simultaneous experience of more than one emotion.
- The experience of mixed emotions is thought to indicate healthier outcomes.
- Research on whether mixed emotional experiences increase with age is discordant.
- Measuring context is vital to understanding mixed emotional experiences.