

## **Psychological Benefits of Attending the Theatre Associated With Positive Affect and Well-Being for Subscribers Over Age 60**

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## Psychological benefits of attending the theatre associated with positive affect and well-being for subscribers over age 60

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### ABSTRACT

**Objectives:** Although late adulthood may be a time of greater well-being, optimal aging still characterizes a minority of older adults. Understanding how individuals achieve well-being across adulthood is important for intervention and social policy. We focused on how attending live theatre might enhance the well-being of a sample of 53 season ticket holders aged 60 and older. Based on a previously tested conceptual framework, we hypothesized that post-performance reports of social-cognitive experience while at the play would predict post-performance positive affect, which in turn would predict well-being.

**Method:** The sample was a subset of volunteers from a large survey study of theatre ticket purchasers. They completed baseline and two-year follow-up measures of well-being, and questionnaires immediately after attending seven plays across two seasons: measures of social engagement, belonging, flow, positive affect, and their reactions to the plays.

**Results:** We found that sense of belonging, social engagement, and flow were associated with positive affect after performances, as hypothesized. We also found that the cumulative positive affect experienced after plays in the two seasons predicted change in well-being between baseline and follow-up.

**Conclusion:** Our findings suggest that attending performances is a combined social, cognitive, and affective experience that transcends entertainment. Future research might investigate whether the psychological benefit model we assessed will generalize to other leisure activities that create similar engagement. The findings have implications for individuals seeking to promote their own well-being, and, possibly more importantly, for policies that support enriching cultural opportunities, particularly in the arts.

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### KEYWORDS

Theatre; well-being; positive affect; flow; social engagement; belonging

The last decades of adulthood are typically a period of greater life satisfaction, lower stress, and fewer mental disorders than earlier decades (Gana, Bailly, Saada, Joulain, & Alaphilippe, 2013; Steptoe, Deaton, & Stone, 2015; Whitbourne & Meeks, 2010). Nevertheless, scholars of well-being note that optimal aging characterizes only a minority of individuals over the age of 65 (Aldwin & Igarashi, 2015; Whitley, Popham, & Benzeval, 2016), suggesting that there is considerable opportunity for improving quality of life and well-being for older adults. Contemporary models of well-being have focused on affective experience (e.g., Fredrickson 2001) or on both hedonic (feeling good) and eudaimonic (functioning well) dimensions of well-being (Friedman & Ryff, 2012; Keyes & Annas, 2009) that include affective, social, and psychological experiences. Understanding how older adults achieve well-being across these dimensions can identify activities and processes for increasing optimal aging. The present paper reports on research examining how attending theatre relates to well-being for some older adults.

### Conceptual background

Well-being in later life reflects accrued social and economic advantages (Pinquart & Sörensen, 2000), but there are also

psychological and behavioral habits that lead to well-being. Among these is finding value in ordinary activities (Wrzesniewski, Rozin, & Bennett 2003). Cantor and Sanderson (1999) argued that participation in meaningful activities lends order and a sense of purpose to daily life. Such engagement leads to a sense of belonging (Cantor & Sanderson, 1999) and more social ties. Higher levels of social engagement are associated with higher well-being (Huxhold, Fiori, & Windsor, 2013) and lower mortality (Kiely & Flacker, 2003). Engaging in meaningful activities may also increase positive affect (Kahlbaugh & Huffman, 2017), and research supports the importance of a balance of positive over negative emotions for well-being (Fredrickson, 2001). The sense that life is meaningful can be affected by experiencing social belonging, positive mood, or contextual stimuli (e.g., viewing pictures) that are ordered in a way that makes sense (Heintzelman & King, 2014).

One large, population-based study of Norwegians related cultural activities to aspects of well-being including life satisfaction and low depression and anxiety (Cuyper et al., 2012). There is also compelling evidence from longitudinal studies of adolescents that arts exposure and engagement foster positive academic and social outcomes (Catterall, 2009; Martin et al., 2013), even when groups

were matched on socioeconomic status. The benefits of arts participation may include the experience of “flow”: periods of engagement with a work of art can lead to a sense of immersion, timelessness, and intense focus, and connect a person to the broader world through a greater understanding of the perspectives of others. Csikszentmihalyi and Robinson (1990) suggested that individuals can experience flow simply by appreciating or enjoying art. Individual encounters are also made meaningful by connections to the larger sociocultural community doing similar things (Nakamura & Csikszentmihalyi, 2002).

Based on this psychosocial and marketing research that connects theatre to psychological factors including increased sense of belonging and social interaction (Hager & Winkler, 2011; Radbourne, Johanson, Glow, & White, 2009), we developed a framework to explain the psychological benefits of theatre-going. We tested this framework in a previous paper using cross-sectional data from a large, multi-generational sample of ticket buyers from one regional theatre (Meeks, Shryock, & Vandenbroucke, 2018). The results supported structural models that connected theatre involvement with the psychological benefits of sense of belonging, social engagement, and flow; these benefits were also related to psychological well-being, life satisfaction, and positive affect. Figure 1 shows the framework of the previous study, modified slightly to depict the focus of the present study. In this paper, we report results of a prospective study of older patrons who reported experiences of flow, belonging, social engagement, and positive affect after repeated theatre visits over two artistic seasons.

## Hypotheses

The purpose of the present study was to follow a cohort of engaged patrons aged 60 and over across two seasons to examine their experiences during each play they attended. We were interested in how affective/psychological responses related to subjective ratings of the performances themselves and sense of connection with the theatre and other audience members on each occasion. Further, we

wished to examine the relationship between these affective and social experiences and change in overall well-being over two years. We hypothesized that:

1. Patrons reporting a sense of belonging, social interaction, feeling knowledgeable about the performance, rating the performance as enjoyable and stimulating, or reporting “flow” during the performances will report higher positive affect following performances.<sup>1</sup>
2. Gains in positive affect, experience of flow, social interaction, and sense of belonging will all predict patron well-being across the two years of the study.

## Methods

### Participants

The participants for the current analyses came from the third phase of a three-part study funded by the National Endowment for the Arts. The University of Louisville Institutional Review Board (IRB) reviewed and approved the study, IRB #15.0350. The first phase was a survey of a large sample of theatre ticket-buyers from Actors Theatre of Louisville. During this survey, we asked participations who were over the age of 60 whether they would like to participate in later phases of the project specifically focusing on the experiences of older patrons. We selected from participants who answered “yes” to this query to include in Parts 2 and 3 of the project. Part 2 involved a series of focus groups for qualitative analysis. The primary results of Parts 1 and 2 have been published elsewhere (Meeks et al., 2018). For the current study, we selected volunteers 60 and older who had a subscription to the theatre, thus intentionally selecting individuals who had strong ties to the organization. Out of the pool of 116 volunteers from the Part 1 survey, 62 agreed to participate. Of these, 53 completed consent forms and at least one survey in Year 1 (see Figure 2). Between Year 1 and Year 2, 1 participant requested to withdraw and 7 completed no Year 2 surveys;

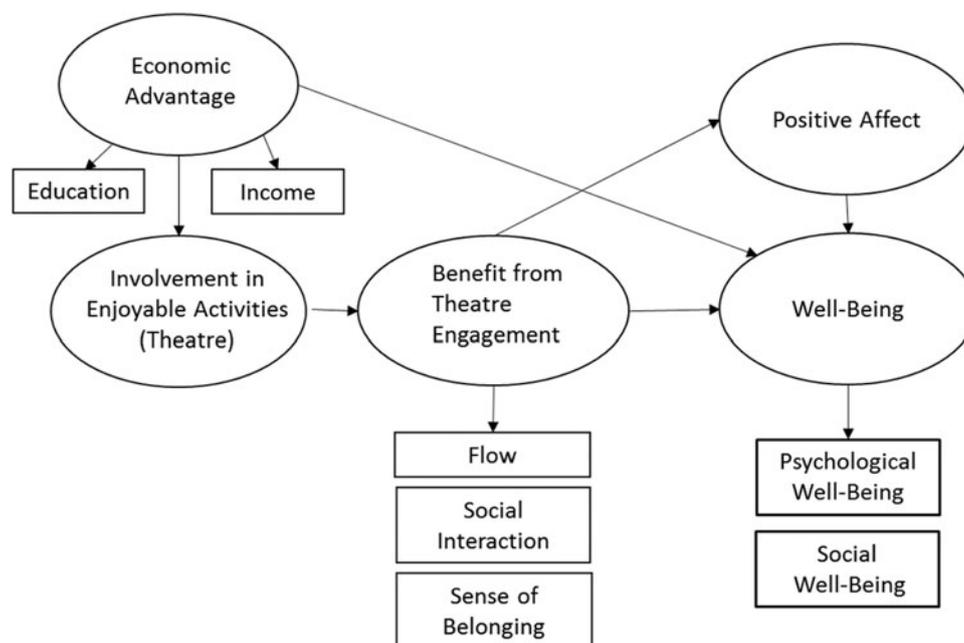


Figure 1. Conceptual framework linking theatre attendance with well-being.

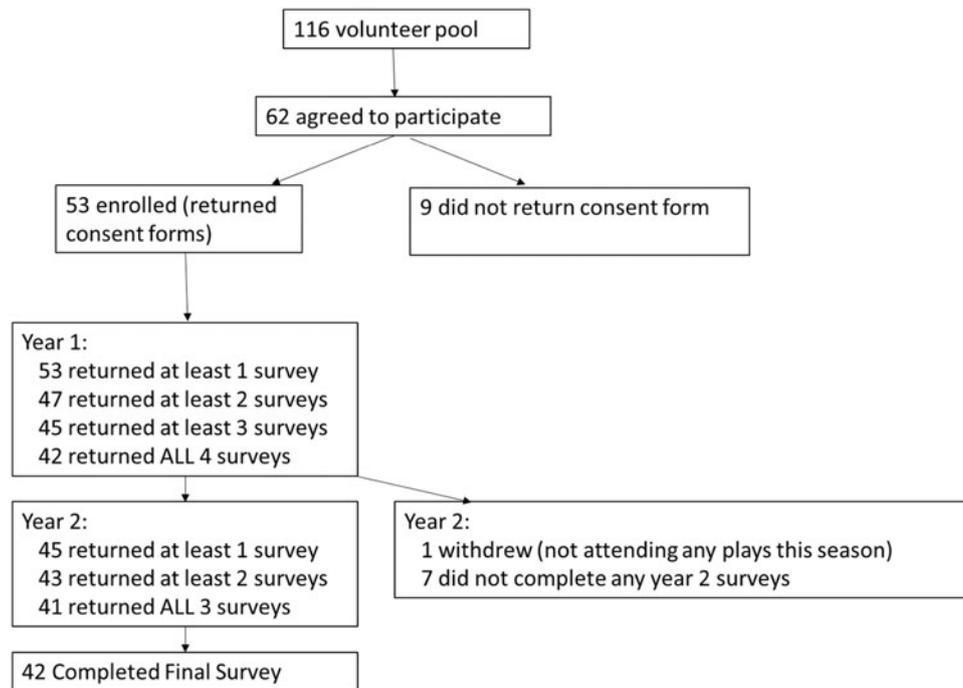


Figure 2. Participant recruitment diagram.

42 participants completed the final well-being surveys in Year 2 and so could be included in all analyses.

Participants ranged in age from 60 to 78, with a mean age of 66.13 ( $SD = 4.61$ ), were 63.6% female and 98.2% of white, European-American heritage. They were mostly married (70.9%) with no children living in their homes (98.1%). They had a mean of 18.18 years of education ( $SD = 3.17$ ). Only 10% had incomes below \$50,000 per year, 22% fell in each of the other income categories \$50,000-74,999, \$75,000-99,999, \$100,000-149,999, and \$150,000 and over, respectively.

### Procedures

The Year 1 baseline measure of well-being was comprised of measures that participants completed online for the Part 1 study, described below. We asked Part 3 participants to complete a short questionnaire after seven plays across two consecutive seasons (four in the first, three in the second season). Participants could choose which performances they rated, and either paper copies of the questionnaires, which they returned to a locked box available in the theatre lobby, or online questionnaires that could be completed on computers or mobile phones. We asked them to complete the questionnaires as soon as possible after the performances, ideally within two hours. The questionnaires asked about sense of belonging, flow, satisfaction with and enjoyment of the performance, knowledge about the performance, social engagement while at the theatre, and positive affect. At the end of the two years, we sent all participants a final online survey that contained the well-being measures. Participants were compensated for their time and participation with a gift card with \$10 for each survey they completed.

### Measures

The primary outcome measures for this study came from the Midlife Development in the United States-II (MIDUS II;

ICPSR 2010) data set. We used the Ryff Scales of Psychological Well-Being, short form, which has 42-items measuring six dimensions of well-being (Ryff, 1989; ICPSR, 2010). We also used the social well-being scales from MIDUS II, which are five three-item scales measuring theoretical dimensions of social functioning (Keyes, 1998; ICPSR, 2010). The social well-being items focus on respondents' sense of social cohesion and community, and include items such as "People who do a favor expect nothing in return," "I have something valuable to give to the world," and "the world is becoming a better place for everyone." There is also a Positive Relations with Others scale that consists of 3 items related to an individual's sense of having warm and trusting relationships; the other Ryff subscales assess purpose in life, self-acceptance, autonomy, environmental mastery, and personal growth. All of the well-being items use a 7-point Likert-type scale that ranges from strongly disagree to strongly agree. For the analyses reported here, we used total scores for the Ryff and Keyes measures to reflect psychological and social well-being, respectively.

Positive affect included the positive items from Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegan, 1988) and Bradburn Affect Scale (Bradburn, 1969): 12 items rated on a 5-pt scale regarding frequency of experiencing positive feelings such as "cheerful," "enthusiastic," "extremely happy," "calm," and "peaceful." These measures were also from the MIDUS II survey, enabling us to compare our findings to a large national data set (see Meeks et al., 2018). We used the mean of all 12 items as the measure of positive affect; these scores ranged from 1 to 5.

Theatre benefit variables included social engagement, sense of belonging, and flow. We modified items from previous research by Steger and Kashdan (2009) to assess social engagement and sense of belonging. To measure social engagement while attending performances, we asked participants to indicate with whom they typically attended, and then to rate how close and connected they felt to those companions, and the overall quality of the

relationship(s). The sum of these two items ranged from 2–10. Sense of belonging was calculated from three items: participants indicated, when attending the theatre, how close and connected to others in general, how understood, and how much a sense of belonging they typically felt, using 5-point Likert-type scales and yielding a summed scale score ranging from 3 to 15. We used the Short Dispositional Flow Scale-II (Jackson, Martin, & Eklund, 2008) to measure flow. This 9-item scale consists of items rated with respect to engaging in a preferred activity (in this case attending theatre), on a scale from 1 (never) to 5 (always). The scale is scored by summing the items and dividing by nine.

In addition to the theatre benefit variables included in our framework (see Figure 1), we also included measures of knowledge about the play and enjoyment of the play. Knowledge was a single item rated from 1–5, not at all to very knowledgeable. The enjoyment measure was a sum of three items: satisfaction with the play, enjoyment of the play, and how stimulating the play was. Each was similarly rated on a 1–5 scale; the overall enjoyment scores ranged from 3 to 15.

We used the demographic categories from the Actors Theatre marketing department, age, sex, education (years of education), income categories, ethnicity/racial identity/national origin, and marital status, to describe the sample.

## Analyses

To test hypothesis 1, we used random coefficient models with IBM SPSS version 25, MIXED module. These models allow modeling fixed and random effects over time, and permit variable numbers of occasions for participants, so all 53 participants who completed more than one questionnaire were included in these models. We first modeled positive affect alone over the survey occasions, comparing intercept, slope, and intercept + slope models to describe how positive affect varied after different performances. We then tested the hypothesis that social engagement, enjoyment, knowledge, flow, and sense of belonging would predict positive affect over occasions, using the random coefficient approach (intercept, slope, or intercept + slope) that best fit the positive affect data.

To test hypothesis 2 regarding the impact of theatre-going on well-being over two years, we used hierarchical multiple regression models with the Ryff psychological well-being and Keyes social well-being total scores as dependent variables. We entered the initial values of these scales in the first step of the equations. We calculated individual means for belonging, flow, and social engagement across all of the questionnaires completed after plays in the two seasons, and calculated a cumulative positive affect score that summed positive affect scores from each

of the post-theatre questionnaires, and these served as the independent variables. In these regression models, we first entered the belonging, flow, and social engagement means, and then in the third step the cumulative positive affect. These models included only those individuals who had complete follow-up well-being data ( $N = 42$ ).

## Results

Table 1 shows the means and standard deviations of the variables for each of seven measurement occasions in Years 1 and 2. (Intercorrelations among these variables are shown in Supplemental Table 1.) Note that the actual time of measurement was different for each participant since the participants selected when to attend the theatre in each season. There was also variability in participants' compliance with our request to complete the questionnaires immediately after the play: about 40% of the questionnaires were completed the same day as the play, 26% the day after, and about 33% a day or more later. Some participants completed questionnaires after more than seven plays, but since those were a much smaller sample, we show only the seven expected plays in Table 1. As the table suggests, scores were quite stable over time, as might be expected if we assume that individual differences predict the largest amount of variance in scale scores of this nature. Figure 3 shows the participants' positive affect scores over occasions. This graph suggests visually that our choice of a random coefficients model for analysis is an appropriate model, since no single regression line is likely to represent these data well. Our preliminary tests of positive affect over the survey occasions showed that the intercept model alone fit the data the best, supporting this assumption. Table 2 shows the results from the three models tested.

### Test of hypothesis 1

In individual random coefficient models, each of the psychological predictors, social engagement, enjoyment, knowledge, flow, and sense of belonging, contributed significantly to positive affect over time. That is, taking into account the intercepts (between subjects differences in overall level of positive affect), each of these variables was related to positive affect levels across assessment occasions. When all the variables were entered in a single model, only social engagement, sense of belonging, and flow contributed significantly to the model. The results of this model are shown in Table 3. Within-subjects correlations of belonging, flow, and social engagement with enjoyment and knowledge showed that enjoyment was highly correlated with flow for most participants (mean

**Table 1.** Means and (standard deviations) of variables rated after performances, by assessment occasion.

Occasion	Social engagement during performances	Sense of belonging	Flow	Enjoyment	Knowledge about performance	Positive affect
Play 1, Year 1	8.64 (1.16)	11.87 (1.88)	3.71 (.93)	12.83 (2.95)	3.87 (.88)	3.61 (.69)
Play 2, Year 1	9.04 (1.17)	12.15 (1.50)	4.02 (.85)	13.65 (2.24)	3.82 (.91)	3.82 (.71)
Play 3, Year 1	8.85 (1.28)	12.00 (2.13)	3.80 (.84)	12.67 (2.67)	3.78 (.99)	3.75 (.72)
Play 4, Year 1	8.90 (1.08)	12.21 (2.47)	3.98 (.81)	13.12 (2.42)	3.78 (.94)	3.89 (.76)
Play 1, Year 2	8.74 (.89)	11.84 (1.86)	3.45 (.91)	11.69 (3.07)	3.77 (1.01)	3.69 (.95)
Play 2, Year 2	8.56 (1.05)	11.73 (1.62)	3.54 (.89)	12.14 (2.91)	3.66 (.94)	3.46 (.72)
Play 3, Year 2	8.73 (1.37)	12.28 (1.43)	3.68 (1.02)	12.41 (3.27)	3.72 (.92)	3.69 (.72)

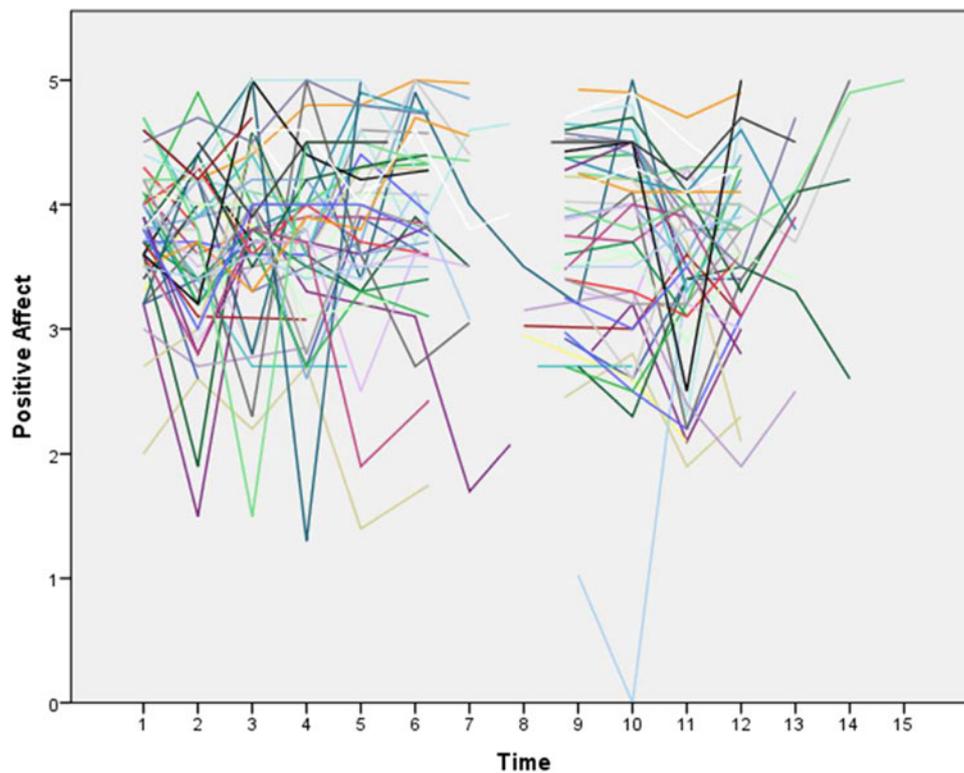


Figure 3. Individual patterns of positive affect across two seasons.

Table 2. Results of three alternative random coefficient models of positive affect scores (rated after each play) by intercept and time ( $N = 53$ ).

	Model 1: random intercepts	Model 2: random slopes	Model 3: random intercepts and slopes*
Akaike's Information Criterion (AIC)	774.38	785.74	775.29
Estimates of Fixed Effect for <b>Intercept</b>	3.74	3.77	3.75
Standard Error	.09	.07	.08
Significance	$t(137) = 41.11, p < .001$	$t(318) = 53.31, p < .001$	$t(53) = 48.32, p < .001$
Estimate of Fixed Effect for <b>Time</b>	-.01	-.01	-.01
Standard Error	.01	.01	.01
Significance	$t(317) = -.51, p = .611$	$t(113) = -.76, p = .449$	$t(33.97) = -.65, p = .518$
Estimate of Covariance Effects	.192 (Intercepts)	.01 (Time)	UN (1,1): .075 UN(2,1): .01 UN (2,2): .00 (Intercepts + Time) Non-significant
Significance	Wald $Z = 3.75, p < .001$	Wald $Z = 3.39, p = .001$	

\*This model was estimated with the covariance matrix set to unknown, and was found to be unstable.

Table 3. Results of random coefficient models with post-performance ratings of positive affect as the dependent variable and concurrent ratings of social engagement, satisfaction/enjoyment/stimulation, knowledge, belonging, and flow as the independent variables.

Estimates of fixed effects

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	0.602	0.280	326.69	2.15	0.032	0.052	1.152
Time	-0.002	0.010	122.79	-0.24	0.814	-0.021	0.017
Social Engagement	0.140	0.032	327.48	4.40	0.000	0.077	0.202
Enjoyment	-0.033	0.020	327.64	-1.61	0.108	-0.073	0.007
Knowledge	0.018	0.038	327.00	0.46	0.645	-0.058	0.093
Belonging	0.083	0.023	326.69	3.67	0.000	0.039	0.128
Flow	0.333	0.066	313.98	5.06	0.000	0.203	0.462

Estimates of Covariance Parameters

Parameter	Estimate	Std. Error	Wald Z	Sig.	95% Confidence interval	
					Lower bound	Upper bound
Residual	0.302	0.026	11.66	<.001	0.255	0.357
Intercept + Time [subject = ID] Variance	0.001	0.001	2.54	0.011	0.001	0.002

$r = .78, SD = .30$ ), suggesting that for many participants these variables were redundant. The correlations between flow and knowledge were more moderate and inconsistent (mean  $r = .37, SD = .41$ ). In general, then, the results of these analyses support Hypothesis 1 that all hypothesized

variables are related to positive affect over time, but there is significant overlap between reports of flow and reports of enjoyment, and partial overlap between reports of participants' knowledge about a play and their experience of flow.

## Test of hypothesis 2

The results of the multiple regression equations predicting change in social and psychological well-being from the initial assessment to two years later are shown in Tables 4 and 5. In these analyses flow, belonging, and social engagement did not contribute significantly to well-being once initial well-being values were accounted for. However, cumulative positive affect reported in post-performance questionnaires accounted for a significant portion of variance, six and nine percent, respectively, in psychological and social well-being, with all other variables already entered in the equation. Although our test of Hypothesis 1 suggests that cumulative post-performance positive affect is related to flow, belonging, and social engagement, we conducted an additional multiple regression analysis to demonstrate this summative relationship with the averaged variables. That is, we regressed the cumulative positive affect variable onto the mean flow, belonging, and social engagement variables. We included the participants' baseline report of positive affect (reported during the Part 1 online survey about their affect in the previous 30 days) in the first step of the equation. The full model produced a significant multiple  $R$  of .50,  $F(4,48) = 3.88$ ,  $p = .008$ . Initial positive affect did not contribute significantly to this equation, but flow, belonging, and social engagement together

**Table 4.** Results of hierarchical multiple regression analyses predicting Year 2 psychological well-being with means of social engagement, belonging, flow, and cumulative positive affect from post-performance ratings.

Variable	$B$	$SE B$	$\beta$
Step 1:			
Year 1 Well-Being	.841	.078	.877**
Step 2:			
Year 1 Well-Being	.795	.095	.830**
Flow	-.586	6.388	-.011
Belonging	-2.025	3.464	-.073
Social Engagement	9.013	4.480	.202
Step 3:			
Year 1 Well-Being	.804	.082	.839
Flow	-3.708	5.546	-.070
Belonging	-2.897	2.979	-.104
Social Engagement	4.652	4.032	.104
Cumulative Post-Performance Positive Affect	1.078	.304	.287*

Note:  $R^2 = .77$  for Step 1;  $\Delta R^2 = .03$  for Step 2 (ns);  $\Delta R^2 = .06$  for Step 3,  $p = .001$ .

\*\* $p < .001$ ; \* $p = .001$ .

**Table 5.** Results of hierarchical multiple regression analyses predicting Year 2 social well-being with means of social engagement, belonging, flow, and cumulative positive affect from post-performance ratings.

Variable	$B$	$SE B$	$\beta$
Step 1:			
Year 1 well-being	.656	.092	.774**
Step 2:			
Year 1 well-being	.670	.108	.790**
Flow	.796	2.646	.049
Belonging	.095	1.433	.011
Social engagement	-1.657	1.897	-.122
Step 3:			
Year 1 well-being	.655	.096	.773**
Flow	-.309	2.392	-.019
Belonging	-.434	1.292	-.051
Social engagement	-2.872	1.742	-.211
Cumulative post-performance positive affect	.393	.132	.356*

Note:  $R^2 = .60$  for Step 1;  $\Delta R^2 = .01$  for Step 2 (ns);  $\Delta R^2 = .09$  for Step 3,  $p = .006$ .

\*\* $p < .001$ ; \* $p = .006$ .

contributed significantly,  $R^2Change = .20$ ,  $p = .009$ . Only the  $t$  value for social engagement reached significance,  $t = .35$ ,  $p = .019$ ; the betas were -.04, .26, and .35, respectively, for flow, belonging, and social engagement. Support for Hypothesis 2, then, suggests that the effects of flow, belonging, and social engagement, on well-being are indirect, through their impact on positive affect.

## Discussion

We set out to explore whether a sample of highly involved older theatre patrons derived psychological benefits from attending performances that might lead to enhanced well-being. For the most part the results of this small prospective study supported our hypotheses. First, we found that social engagement, belonging, and flow were significantly associated with participants' reports of positive affect following performances. Enjoyment of and knowledge about the play did not contribute to the models we tested, perhaps because they tended to be highly correlated with flow and therefore were redundant in the models. Second, we found that the cumulative positive affect experienced following multiple performances in two theatre seasons predicted change in well-being from baseline to two years later. Social engagement, belonging, and flow did not contribute directly to change in well-being, but they did contribute significantly to cumulative positive affect, controlling for baseline levels of positive affect reported before the prospective study began. This suggests that there may be an indirect effect of these theatre benefits on well-being through their impact on positive affect, although the indirect effect could not be tested directly in this small sample.

What do these findings tell us about attending theatre? Our findings suggest that improving positive mood is the most important benefit of attendance with respect to the impact on well-being. The importance of positive affect for well-being has been noted in diverse research programs that have demonstrated advantages of maintaining or up-regulating positive affect for physical and mental health (e.g., Fredrickson, 2001; Friedman & Ryff, 2012; Nicholas et al., 2017; Taylor, Lyubomirsky, & Stein et al., 2017). It appears that, at least for the committed patrons we studied, attending theatre provides the opportunity to interact with others, feel part of a community, and spend time in the focused, engaged state that Csikszentmihalyi and others have called flow; these experiences predict increases in positive mood. This impact on mood may not depend on the affective content of the performances themselves. Although we did not ask these participants about what emotions the plays evoked, a different sample of patrons who participated in focus groups for Part 2 of the larger project spoke eloquently about the benefits of attending plays that were difficult and thought provoking, and demonstrated their relish in critiquing plays they did not enjoy (Meeks et al., 2018).

Social engagement, belonging, flow, and positive affect map onto well-established dimensions of well-being (Whitley et al., 2016), raising the question of the extent to which these factors are independent or merely alternative indicators of well-being (George, 2010). Our findings suggest that, although average well-being and positive affect

are stable over time, post-performance fluctuations of positive mood are related to performance-specific social and cognitive experience, and the cumulative boost in positive affect associated with those performances is enough to predict change in well-being over two years. Thus the experiences of audience members during and after performances might be thought of as active and variable processes that maintain and promote well-being outcomes.

Should we therefore be prescribing theatre attendance to promote well-being in later life? Unfortunately, the findings cannot be interpreted that simply. This study sample is small and highly selected. They are nearly all white, of European-American origin, and on average are wealthier and more educated than the U.S. or local populations. In this sense, they may be typical theatre-goers (National Endowment for the Arts, 2013) but they are not in other ways broadly representative. Further, the participants have chosen to attend theatre as a major pastime, and thus their enjoyment of performances may tell us little about benefits that adults with different interests might derive from attending. It is also possible that people who derive positive experiences from theatre performances have personality traits that predispose them to derive positivity from many types of activities. These same traits of openness and agreeableness, for example, might also predict long-term well-being (Kahlbaugh & Huffman, 2017). Although our study was prospective with respect to the measurement of well-being, the measures of performance-specific social engagement, belonging, flow, and positive affect were concurrent. Thus, it is possible that individuals who arrived at the theatre in a good mood were more likely to engage socially and to become engrossed in the performances, contrary to the directional expectations of our conceptual framework (Figure 1). More fine-grained analyses using techniques like ecological momentary assessment, embedded in a longer prospective study, might help to sort out the causal directions implied in these findings.

We developed the conceptual framework in Figure 1 to try to explain how individuals who have maintained long-term relationships with a regional theatre benefit psychologically from those relationships. We hope, however, that this framework may generalize to understanding benefits of other types of civic, artistic, or leisure involvement that may contribute to well-being over the life span. There is increasing interest in how leisure activities relate to well-being (e.g., Freire, 2018). Tay, Pawelski, and Keith (2018) recently proposed a conceptual model linking arts participation to flourishing. They named their key concepts immersion, embeddedness, socialization, and reflectiveness; the constructs we measured could easily fit within their conceptual model. Our findings are also consistent with the framework underlying the European population-based wellness campaign Act-Belong-Commit (Donovan & Anwar-McHenry, 2016), and recent research supporting the longitudinal relationship of activity participation and commitment, and social belongingness, with well-being in later life (Santini et al., 2018). Our results suggest that attending theatre performances is a combined social, cognitive, and affective experience. The apparent importance of the social aspect implies that this experience is richer than passive entertainment. In our previous analyses of focus groups, participants emphasized the social nature of live theatre in

contrast to, for example, movies. They recognized social experiences with their companions, with fellow audience members (often the same people over multiple seasons since many were subscribers), and with the actors, seeing live theatre as an interactive process (Meeks et al., 2018). In general, then, activities that create a sense of community and social bonding and stimulate interest and focused attention may contribute to maintaining or regulating positive affect, which in turn may maintain psychological and social well-being. Well-being in late life is multi-dimensional and results from complex and lifelong interactions among resources and privilege, personality, and activity, so simple prescriptions of any kind are of limited value. For example, recent research has shown that personality characteristics may influence what types of activities individuals select and also the affective benefit they derive from those activities (Kahlbaugh & Huffman, 2017). Still, having the good fortune to develop and maintain a pastime like attending live theatre that combines the social, cognitive, and affective benefits we have described may contribute significantly to living well in the latter decades of life.

## Notes

1. In our grant proposal this hypothesis referred to the change in positive affect from before to after each performance as the dependent variable, but we found that collecting such pre-post performance data was not feasible within the overall design and budget of this study. We therefore modified the original hypothesis before collecting the data to reflect only post-performance positive affect.

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