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Death-related publicity as informational advertising: evidence from the music industry

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Abstract The sales of books, DVDs, and music albums frequently increase substantially after the death of an artist. Yet, the mechanism behind this stylized fact remains unclear. In this paper, we examine whether after-death sales increases reflect primarily an affective reaction of existing customers or informative advertising for previously uninformed new customers. In our main study, we use weekly sales data for 446 music albums of 77 artists who died between 1992 and 2010. We show that album sales increase on average by 54.1 % after death and that the relative increase in sales is higher for the artist's better albums. This suggests that death-related publicity serves primarily as informational advertising that attracts new customers who buy the artist's best albums after death. Complementary evidence from a survey study with more than 2,000 participants confirms this interpretation and shows that information-based motives are relatively more important for after-death consumption than affect-based motives.

Keywords Death-related effects · Advertising · Context effect · Publicity · Cultural markets

1 Introduction

It is a stylized fact of cultural markets that product sales of an artist increase after death. Consider the recent deaths of Lou Reed (singer), Philip Seymour Hoffman (actor), and

L. Brandes (✉)
Warwick Business School, University of Warwick, Coventry CV4 7AL, UK
e-mail: leif.brandes@wbs.ac.uk

S. Nüesch
School of Business and Economics, University of Münster, Georgskommende 26, 48143 Münster, Germany
e-mail: stephan.nueesch@wiwi.uni-muenster.de

E. Franck
Department of Business Administration, University of Zurich, Plattenstrasse 14, 8032 Zurich, Switzerland
e-mail: egon.franck@business.uzh.ch

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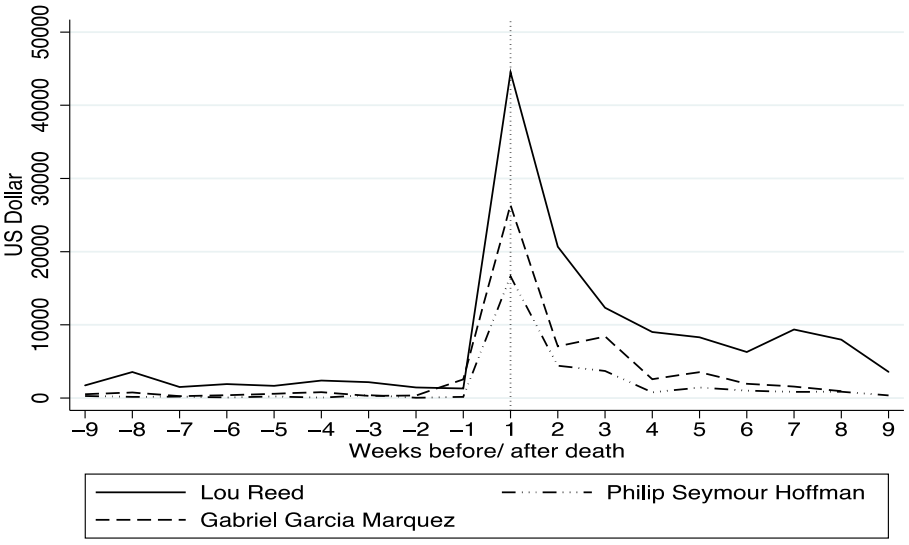
Gabriel Garcia Marquez (writer). Figure 1 shows, for each artist, the weekly total sales for related products on *Ebay.com* in the 9 weeks before and after death. For all three artists, we can see an immediate and dramatic sales increase once the news about the death starts to spread. In the music industry, which serves as the context for the present study, the sales gains of a dead artist are often so high that the artist's albums reenter the charts. For example, after Michael Jackson had died on June 25, 2009, it took less than 24 h for his work to account for every entry in the top 10 album charts at *Amazon.com*. The death of Whitney Houston even led to a new sales record. In the week following her death on February 21, 2012, she became the first woman to place three albums in the top 10 of the *Billboard 200* charts at the same time.

A key feature of cultural markets is that the products (e.g., books, music albums, movies) are reproducible. This marks a considerable difference from the market for fine art, where researchers have already analyzed "death effects" (e.g., Ekelund et al. 2000; Ursprung and Wiermann 2011). Their evidence shows that art prices generally increase after death, because an artist's death fundamentally restricts the supply of new originals. This evidence, however, is only of limited value to understand the depicted after-death sales increases in cultural markets.

In a recent study on customers' online responses to celebrity deaths, Radford and Bloch (2013) demonstrate that intense emotional connections between consumers and deceased celebrities can explain increased product sales after death. Specifically, they argue that existing customers feel a need to "compensate the loss of a beloved idol" (p.45) which causes them to purchase products that bring them closer to the deceased person. That is, existing customers derive psychological benefits from the consumption of products that relate to the deceased person. While this explanation is appealing, it is unable to explain a considerable part of the frequently observed death-related effects. For example, within hours of Michael Jackson's death, his most successful album,



Notes: This data has been obtained from *Terapeak.com*. We set the day of the death as the first day of week 1.

Fig. 1 Total sales at *Ebay.com* before and after artist deaths

Thriller, ranked first in the *Amazon.com* Top 10 album charts. It seems plausible that his existing customers had already purchased this album many years before his death, so who was behind this substantial sales increase?

In this paper, we introduce and examine the alternative explanation that death-related artist publicity leads to increased sales from previously uninformed customers. We argue that death-related publicity may serve as a form of informative advertising that increases customers' awareness for the deceased artist's products. Our research goal is to answer the question if death-related effects are predominantly caused by psychological benefits for existing customers, or by increased awareness of previously uninformed customers. This is an important question for marketers and retailers, as it determines their optimal communication mix to maximize after-death sales. Depending on the answer, after-death message content should either be as informative as possible about the artist and her work, or primarily cater to existing customers' need for loss compensation.

We choose the music industry as the context for our empirical analysis. Two features of this industry make it well suited for our research purposes. First, *Nielsen SoundScan* provides exact information on weekly album sales from more than 14,000 points of sale in the US market. Second, several websites, such as *Allmusic.com* provide expert evaluations for album quality. This second feature is important for our empirical identification strategy: While new customers are likely to cherry-pick from the artist's back catalogue (i.e., after-death demand levels are increasing in pre-death album success and quality), existing customers are likely to complete their collection with albums they did not buy before death (i.e., after-death demand levels are decreasing in pre-death album success and quality).

In our main study, we analyze weekly US sales data for 446 albums of 77 artists who died in the period 1992–2009. We find that the sales of an artist's better albums profit disproportionately from death-related publicity. As we control for album-specific weekly publicity, higher media visibility of the better albums of an artist cannot explain the asymmetry of after-death sales increases. Overall, our findings suggest that the death effects in the US music industry are predominantly driven by the sales to new customers who become aware of the deceased artist due to death-related publicity.

In a complementary study, we analyze individual survey responses about death-related music consumption from more than 2,000 participants. We find that our empirical identification strategy for the main study is confirmed: The album quality of after-death purchases by new customers is significantly higher than the album quality of existing customers (who purchased significantly better albums before death). In line with our theoretical framework, we also find that existing customers show much stronger emotional reactions to the news about the artist's death and experience personal mortality salience to a larger extent. Finally, we estimate a Logit model to determine the relative importance of information-based and affect-based motives for after-death consumption. While we find that both types of motives significantly increase the likelihood of at least one after-death purchase, the marginal effect from information-based motives is larger. Thus, we are able to replicate our main finding from the field study for individual-level survey data.

Our study makes three important contributions. First, we extend Radford and Bloch's (2013) theoretical framework and model after-death sales increases both as an affective reaction of existing customers and as a reaction of previously uninformed customers. This distinction is important because it determines the range of products that

show the greatest death-related sales gains. Second, we extend previous work (e.g., Berger et al. 2010; Hendricks and Sorensen 2009) on imperfect customer information in cultural markets. These studies usually focus on informational effects for *new* products. Instead, we consider long-existing products from artists towards the end of their career. Importantly, we find that customer information is incomplete even for superstars like Michael Jackson or Whitney Houston at the end of their careers. This implies that imperfect customer information does not necessarily correct itself over time. Third, we inform retailers that a person's pre-death buying activity can be valuable information for the targeting of retailers' after-death communication. Many online retailers such as *Amazon*, *iTunes*, or *Netflix* know a customer's complete order history and often provide person-specific product recommendations. Our results suggest that retailers can also use this information after the death of an artist: While someone with a pre-death order history should receive emotionally laden notifications, new customers should receive notifications that highlight the artist's most popular work.

2 Theoretical background

When people experience the loss of an emotionally important individual, they feel lonely and exhibit various types of attachment behavior (Radford and Bloch 2013; Weiss 1988). This attachment behavior is intended to rebuild personal security by "seeing, hearing, or touching the attachment figure" (Weiss 1988; p. 40). Customers for whom the artist is autobiographically salient have an increased need for artist proximity. In fact, Radford and Bloch (2013) show that, after death, fans show an increased interest in goods that have been "contaminated by contact with the deceased person, elevating the items' statuses" (p. 45–46). The consequence is that these "contaminated goods" become more appealing to customers after death.

Death-related news about an artist may additionally lead to mortality salience for customers. That is, such news may remind customers that their own time on earth is ultimately finite. The associated distress has frequently been termed "terror," and is likely to be higher, the closer a person's connection to the deceased artist. [1] In response, customers adopt "terror management practices," i.e., procedures that help them to bolster self-esteem (Greenberg et al. (1986)).

Importantly, both the loneliness that fans feel after the death of "their" artist and the perceived extent of mortality salience frequently lead to a higher degree of experienced nostalgia (Wildschut et al. 2006). The reason is that, in contrast to the traditional view that nostalgia is a bittersweet emotion, it has recently been found to be inherently a positive affective state (Holak and Havlena 1998; Wildschut et al. 2006), which serves as a terror management practice by making thoughts about death less accessible (Routledge et al. 2008). For music songs, this positive affective state has been found to be strongest when individuals are familiar with the song and link it to important autobiographical events (Barrett et al. 2010). In consequence, death-related news about an artist may influence original product evaluations through the self-reassuring mechanism of nostalgia. Specifically, feelings of nostalgia improve those evaluations by

[1] In Section 5, we provide empirical evidence that this is indeed the case.

serving as a positive context for encoding of product information (e.g., Goldberg and Gorn 1987; Coulter and Punj 1999; Meyers–Levy and Tybout 1997).

A recent study by the *Nielsen Company* provides suggestive support for this idea and finds that the sentiment of online buzz about an artist becomes more positive after death. Analyzing online conversations in the days before and after Michael Jackson's death, they found that 47 % of online commentators mentioned Michael Jackson positively after his death, while this share was just 17 % before his death. Similarly, the share of negative mentioning reduced from 31 % to 6 % (Billboard.com 2009).

It is reasonable to assume that the demand of existing customers will focus on albums that they did not purchase before the artist's death.[2] While some might simply aim to complete their collection, the need for loss compensation or feelings of nostalgia might make others find owning previously non-purchased albums more valuable after death, thus increasing the likelihood for purchase.

H1: If death-related sales effects stem from existing customers with intense emotional connections to the deceased artist, previously unsuccessful (low quality) albums will show the greatest after-death sales increase.

Besides its effect on existing customers, death-related publicity may also introduce new people to the artist's products. Because a large number of products is released every week in cultural markets, customers are not perfectly informed about all available products. Recent research in these markets supports the idea of imperfect customer information, finding that product sales of previously unknown products increase after successful new product introductions (in the music business; Hendricks and Sorensen 2009) and even after negative publicity (in the book market; Berger et al. 2010).

When customers are imperfectly informed about products, death-related artist publicity can serve as a type of "informative advertising" (Bagwell 2005; Stigler 1961; Nelson 1974), which helps customers to learn about the existence of the deceased artist and his albums, and enables them to choose products that better suit their needs. In consequence, death-related information about an artist makes customers more aware of the artist and his albums, and thus improves product awareness and accessibility during choice processes. Marketers have long acknowledged the importance of consideration for choice (Hauser 1978; Nedungadi 1990).

It is important to note that such informative advertising effects may also improve accessibility for customers who were *previously* aware of the artist and his products but then forgot about them (before purchase). For these customers, death-related information serves as a reminder about the products' existence and causes them to be again 'top of mind,' which increases the purchase likelihood (Berger et al. 2010).

A previously uninformed customer who learns that he or she likes the songs of a deceased artist faces the question which (and how many) of the artist's albums he or she

[2] When technologies differ, there might be utility from owning an album twice. For example, a consumer who owns a specific album on vinyl might later buy the same album in compact disk format. However, after-death sales increases are not restricted to artists whose albums became available in additional formats over time. For example, no technological change occurred between when singer Amy Winehouse released her first album in October 2003 and her death in 2011. Still, she sold 110,000 albums in the US during the 8 days that followed her death. In comparison, she moved 58,000 in all of 2010, and 44,000 in 2011 before her death. (Billboard.com 2012)

should purchase. In spite of the complexity of this problem, it is reasonable to expect that the customer will concentrate on the artist's best album(s): While albums are differentiated in quality, they sell at essentially identical prices. To learn about an album's unobservable quality, customers can use (1) the purchasing actions of other customers and (2) quality evaluations of experts. Several studies show that both observable purchasing decisions from earlier customers and expert evaluations impact the product choices of subsequent customers (Reinstein and Snyder 2005; Zhu and Zhang 2010; Cai et al. 2009; Bikhchandani et al. 1998; Zhang 2010; Moretti 2011).

H2: If death-related sales effects stem from previously uninformed new customers, previously successful (high quality) albums will show the greatest after-death sales increase.

3 Empirical analysis

3.1 The data

We use historical sales figures for 446 albums of 77 artists who died "naturally" between January 1, 1992 and March 14, 2010. "Natural" deaths include forceful deaths, such as the killing of Tupac Shakur, but rule out evident suicides, such as the one by Curt Cobain (Nirvana). To appear in our list, a dead artist also had to be portrayed in the *All Music Guide to Rock* (3rd edition). This book features more than 2,000 artists and bands in the musical genres rock, pop, rap, funk, soul, singer/songwriter, and hip hop. We obtained weekly album sales data from *Nielsen SoundScan*, a market research firm that tracks sales of music products throughout the United States and Canada. *Nielsen SoundScan* collects the sales data at more than 14,000 points of sale, both retail and online stores. The *Nielsen SoundScan* sales data have been available since 1992 and serve as source for the well-known *Billboard* music charts. We received the weekly sales data of all albums registered by *SoundScan* if the identified artist had released fewer than 15 albums and a random selection of 15 albums if the artist had released more than 15 albums.[3] We consider major studio releases to be albums but exclude singles and greatest hits compilations from our analysis.

We collected biographical data, such as birth and death dates, cause of death, and album release dates from the *All Music Guide to Rock*, *Wikipedia*, *Allmusic.com*, and press articles using the *LexisNexis* database. A complete list of the artists' names, number of albums in our sample, cause of death, and age at death by musical genre is displayed in Table 1.

To test our theoretical predictions (H1; H2), we construct measures for pre-death album success and quality. We measure pre-death album success by the logarithm of accumulated pre-death album sales, and we measure album quality by expert evaluations from the professional website *Allmusic.com*. The album ratings at *Allmusic.com* are determined by a network of over 900 music critics who use a 1 to 5 diamond system (5 is the highest rating) with half a diamond as minimum discrimination.

[3] The reason for this restriction was financial.

Table 1 List of artists who died between 1992 and 2010

Artist name	Cause of death	Age at death	Artist name	Cause of death	Age at death
Genre: hip hop/rap					
2Pac (4)	Shot dead	25	Aaliyah (3)	Airplane crash	23
Eazy-E (1)	AIDS	31	Notorious B.I.G. (2)	Shot dead	25
Ol' Dirty Bastard (3)	Overdose cocaine	36			
Genre: soul/funk					
Arthur Alexander (1)	Heart attack	51	Arthur Conley (4)	Cancer	58
Barbara George (1)	Unknown	64	Barry White (15)	Stroke	59
Betty Everett (1)	Natural death	62	Billy Preston (5)	Malignant hypertension	60
Curtis Mayfield (12)	Natural death	58	Dee Dee Warwick (1)	Natural death	63
Dusty Springfield (13)	Breast cancer	60	Edwin Starr (5)	Heart attack	61
Harold Melvin (7)	Stroke	53	James Brown (7)	Cardiac insufficiency	74
James Carr (3)	Lung cancer	59	John Fred (1)	Major complications	64
Johnnie Taylor (9)	Heart attack	62	Junior Walker (1)	Cancer	64
Luther Ingram (4)	Heart failure	62	Major Lance (1)	Heart failure	53
Mary Wells (6)	Throat cancer	49	Ray Charles (11)	Liver cancer	74
Rick James (8)	Heart failure	57	Rufus Thomas (6)	Heart failure	85
Willie Hutch (3)	Natural death	59	Wilson Pickett (6)	Heart attack	65
Genre: (hard) rock/metal					
Brainiac (3)	Car accident	29	Dan Fogelberg (15)	Prostate cancer	56
Davy Graham (8)	Lung cancer	68	Doug Sahm (6)	Heart attack	58
Fred Neil (5)	Cancer	66	George Harrison (13)	Lung cancer	59
Harry Nilsson (10)	Cardiac insufficiency	53	Jerry Garcia (13)	Heart attack	53
John Denver (10)	Airplane crash	54	Paul Davis (6)	Heart attack	60
Sandy Bull (4)	Lung cancer	60	Silkworm (8)	Car accident	40
Syd Barrett (2)	Pancreatic tumors	61	The Grateful Dead (9)	Heart attack	53
Genre: singer/songwriter					
Charlie Feathers (2)	Stroke	66	David Ackles (4)	cancer	62
Elliot Smith (5)	Suicide or homicide	34	Ernie K-Doe (1)	Kidney failure	65
Ian Dury (5)	Liver cancer	58	Jeff Buckley (1)	Been drowned	31
Kevin Coyne (5)	Lung fibrosis	61	Laura Nyro (11)	Cancer	50
Skip Spence (1)	Lung cancer	53	Ted Hawkins (4)	Stroke	58
Warren Zevon (15)	Cancer	57			
Genre: pop, pop/rock					
Beat Farmers (6)	Heart attack	41	Epic Soundtracks (3)	Unclear	38
Frank Zappa (11)	Prostate cancer	53	Joe Strummer (4)	Heart failure	50
Kristy MacColl (3)	Killed	41	Laura Branigan (6)	Brain aneurysm	47
Michael Jackson (11)	Homicide	51	Phil Seymour (1)	Lymphoma	41
Robert Palmer (12)	Heart attack	55	The Bee Gee's (12)	Volvulus	53
Genre: other					
Billy Lee Riley (2)	Bowel cancer	76	Bo Didley (4)	Heart attack	79
Carl Perkins (7)	Laryngeal cancer	66	Coil (5)	Accident	43

Table 1 (continued)

Artist name	Cause of death	Age at death	Artist name	Cause of death	Age at death
Cub Koda (4)	Kidney failure	52	Hasil Adkins (7)	Run over	69
LaVern Baker (8)	Heart failure	67	Little Eva (2)	Cervical cancer	60
Lonnie Donegan (7)	Heart attack	72	Lou Rawls (6)	Lung cancer	70
Nicolette Larson (7)	Liver failure	45	Richard Berry (1)	Heart failure	62
Ruth Brown (7)	Heart failure	79			

Genre classification according to the *All Music Guide to Rock*, 3rd edition, albums in sample in parentheses

3.2 Estimation strategy

The baseline regression model that we estimate is:

$$\ln(\text{sales}_{ijt}) = \beta_0 + \beta_1 AD_{jt} + \beta_2 \text{Pub}_{it} + X_{it}'\beta + \mu_i + \varepsilon_{ijt}, \quad (1)$$

where the subscripts j, i, and t denote artists, albums, and weeks, respectively. As album sales are highly skewed, we use the logarithm of weekly album sales as dependent variable. AD_{jt} is a dummy variable that denotes after-death sales observations and the coefficient β_1 illustrates the proportional increase in sales in the after-death period in comparison to the pre-death period.

The variable Pub_{it} measures album-level publicity. Using the *LexisNexis* database that contains press articles of numerous US quality newspapers (e.g., *USA Today*), tabloid newspapers (e.g., *The Boston Herald*), press agencies like *The Associated Press*, weekly magazines (e.g., *Life*) or music magazines (e.g., *Billboard*), we count the weekly number of articles in which the album was mentioned at least once. The search string included the name of the album and the name of the artist. By including both album-level publicity (Pub_{it}) and the after-death indicator AD_{jt}, we are able to estimate separate publicity effects from the album- and artist-level on album sales. The variable Pub_{it} controls for the fact that more popular albums may receive comparably higher death-related press attention than less popular albums of the same artist, which might result in different sales reactions across albums.

The vector X_{it} includes several control variables, namely a second polynomial of the number of weeks since an album was released, 51 week-of-the-year dummies and year fixed effects. While the 51 week-of-the-year dummies control for seasonality effects in sales throughout the year, year fixed effects consider annual industry-wide time trends in music sales. We include *Album weeks* and *Album weeks*^{2} in our model to consider that album sales are subject to a common nonlinear time trend (Moe and Fader 2001, 2002; Hendricks and Sorensen 2009). μ_i denotes album fixed effects and ε_{ijt} the idiosyncratic error term. The album fixed effects capture all time-invariant differences across albums (e.g., album quality, attractiveness of the cover, and the number of songs).

To empirically disentangle the two opposing theoretical explanations for the death-related impact on sales, we augment Eq. 1 and include an interaction term of the AD_{jt} indicator with pre-death album success (PD Success_i):

$$\ln(\text{sales}_{ijt}) = \gamma_0 + \gamma_1 AD_{jt} + \gamma_2 [AD_{jt} \times PD\text{Success}_i] + \gamma_3 \text{Pub}_{it} + X_{it}'\gamma + \mu_i + \varepsilon_{ijt}, \quad (2a)$$

or an interaction term of the AD_{jt} indicator with album quality (Quality_i):

$$\ln(\text{sales}_{ijt}) = \gamma_0 + \gamma_1 AD_{jt} + \gamma_2 [AD_{jt} \times \text{Quality}_i] + \gamma_3 \text{Pub}_{it} + X_{it}'\gamma + \mu_i + \varepsilon_{ijt}. \quad (2b)$$

The included interaction terms test whether the sales impact of death-related publicity is moderated by pre-death album success and quality. Under Hypothesis 1, we expect significantly negative interaction effects, while we expect significantly positive interaction effects under Hypothesis 2.

4 Results

Table 2 displays estimation results for an eight months treatment "window," comprising 4 months before and after the artist's death. We first look at the specification without the interaction term, displayed in column (1). Our estimation results confirm that the "death-effect" is a stylized fact of the music market: Relative to pre-death sales levels, weekly album sales are 54.1 % higher after death. Given that we control for death-related album publicity, the size of the *After Death* (AD_{jt}) effect is large.

To test whether the reported impact on sales stems from affective reactions of existing customers (H1) or increased awareness of previously uninformed new customers (H2), we look at the interaction effects in Table 2. The interaction effects are positive and statistically significant at least at the 5 % level, implying that the sales of successful, high-quality albums profit disproportionately from death-related publicity at the artist level. This finding suggests that death-related publicity serves predominantly as a form of informative advertising.[4]

5 Complementary evidence

In May 2014, we conducted a survey study with more than 2,000 participants on *Amazon Mechanical Turk* to test our identification assumption that new customers purchase significantly better albums after death than existing customers.[5] Specifically, we asked participants about their before- and after-death consumption in connection with the deaths of Michael Jackson, Whitney Houston, and Lou Reed. In addition, participants had to state their motives for after-death consumption (if any), the extent to

[4] We emphasize that the findings illustrated in Table 2 are robust when performing several sensitivity tests, such as a change in the treatment window (i.e., using 2 or 6 months before and after death), and the exclusion of potential suicides (Elliot Smith, Epic Soundtrack), bands (Beat Farmers, Brainiac, Coil, Silkworm, The Bee Gee's, and The Grateful Dead), and superstars (2Pac, Aaliyah, Michael Jackson, Notorious B.I.G., Ray Charles). The results are available from the authors.

[5] Due to a coding mistake, a small number of participants was able to complete the survey multiple times (at most three times). We were able to filter multiple entries by means of the unique *Amazon Mechanical Turk* WorkerId.

Table 2 Treatment and interaction effects on weekly sales

Dependent variable	Log album sales		
	4 months before/after (34 weeks)		
Explanatory variables	(1)	(2)	(3)
After death (AD)	0.541[c]	0.051	0.143
	(0.110)	(0.148)	(0.198)
Pre-death sales × AD		0.091[c]	
		(0.024)	
Expert evaluation × AD			0.117[b]
			(0.055)
Log album publicity (Pub)	0.430[c]	0.380[c]	0.422[c]
	(0.101)	(0.084)	(0.100)
Album weeks	−0.002	−0.016[b]	−0.001
	(0.008)	(0.008)	(0.008)
Album weeks^2 (in 10^{-4})	−0.007	0.050[a]	−0.015
	(0.022)	(0.027)	(0.022)
Week of the year fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Album fixed effects	Yes	Yes	Yes
R^2 (within)	0.206	0.256	0.210
Observations	13,771	13,771	13,771
Albums	446	446	446

Displayed are empirical results from an ordinary least-squares regression (OLS) where the logarithm of weekly album sales is the dependent variable. The indicator variable *After death* equals 1 for weeks after the artist's death. *Pre-death sales* denote the logarithm of the album's cumulated sales in the pre-death period (since 1992). *Expert evaluation* denotes the number of diamonds an album received at *Allmusic.com*. The standard errors (in parentheses) are White's heteroscedasticity-robust and clustered at the artist level to take potential correlation of the error terms across artist observations into account

[a] Statistically significant at 10 %

[b] Statistically significant at 5 %

[c] Statistically significant at 1 %

which the death created personal mortality salience, as well as their emotional reaction to news about the death. To make our results comparable to those in the main study, we restricted survey participation to residents in the United States.

Participants first had to answer if they had purchased or downloaded any of the artist's music after death. Those who answered that they had (around 20 %) then needed to select the purchased albums from a pre-compiled artist-specific list of studio albums and Best-of compilations.[6] To appear on the list, an album had to have a quality rating on *Allmusic.com*. To ease recall for participants, each list entry showed the album's name and a picture of its cover. Based on a person's number of after-death purchase

[6] For Michael Jackson and Lou Reed, we also included all studio albums and some Best-of compilations for the Jackson Five and the Velvet Underground, respectively.

decisions, and the associated quality ratings on *Allmusic.com*, we calculated the average product quality levels before and after death for existing and new customers.

Figure 2a shows that new customers generally purchase better albums after death than existing customers. The difference is statistically significant at the 1 % level for Michael Jackson ($t=-2.65$, $p<0.01$) and at the 5 % level for Lou Reed ($t=-2.24$, $p<0.05$) but insignificant for Whitney Houston. Figure 2b shows that existing customers indeed bought albums of lower quality after the artist's death than before the artist´s death. The difference is statistically significant for Michael Jackson ($t=-4.89$, $p<0.001$), for Whitney Houston ($t=-2.55$, $p<0.01$), and marginally insignificant for Lou Reed ($t=-1.59$, $p=0.12$).

As far as the motives for after-death consumption are concerned, we asked participants if they had purchased the albums because (1) they liked the items better after death, (2) they wanted to finally own the artist's best work, (3) they repurchased the items in a new technological format, (4) these items were cheaper, (5) they expected them to become scarce after death, (6) the items were "hot" after death (everybody was buying them), or (7) they did not know about the items before death. Each item was measured on a seven-point Likert scale (1=disagree strongly, 7=agree strongly). Three interesting differences emerge across new and existing customers. First, and most importantly, new customers are more likely to buy items about which they did not know before death ($t=4.36$, $p<0.01$). Second, new customers are more likely to buy items, because they want to finally own the artist's best work ($t=1.71$, $p<0.10$). Third, new customers, almost by definition, are less likely to repurchase an item in a different technological format ($t=-11.90$, $p<0.01$). In contrast, existing and new customers did not differ with respect to the importance of the other motives.

In the theoretical section, we argued that existing customers experience stronger emotional reactions to news about the death and a greater need for loss coping than new customers. To test this idea, we asked survey participants about their feelings when hearing about the news of the death. Specifically, participants had to indicate the extent to which they had felt sad, sorry, and regretful. Again, each item was measured on a seven-point Likert scale (1=disagree strongly, 7=agree strongly). We find that existing customers rate significantly higher on each of these three items, and that the difference is greatest for feelings of sadness (sad, $t=-28.92$, $p<0.01$; sorry, $t=-22.57$, $p<0.01$; regretful, $t=-18.39$, $p<0.01$). Similarly, we argued that existing customers experience a higher degree of mortality salience through the artist's death than new customers. To test this idea, survey participants had to indicate their agreement with the following statement: *"The death of [name of artist] increased my awareness of my own mortality."* As expected, existing customers agreed to a greater extent with this statement than new customers ($t=15.75$, $p<0.01$). Overall, these observations provide clear support for the validity of our theoretical reasoning and add credibility to our identification assumption in the main study.

To replicate our main finding from the field study that information-based motives are relatively more important for after-death consumption than affect-based motives, we estimate the following Logit specification

$$\Pr(AD\text{Purchase}_i = 1) = \gamma_0 + \gamma_1 \text{Information}_i + \gamma_2 \text{Affect}_i + \gamma_3 \text{BDPurchase}_i + \varepsilon_i \quad (3)$$

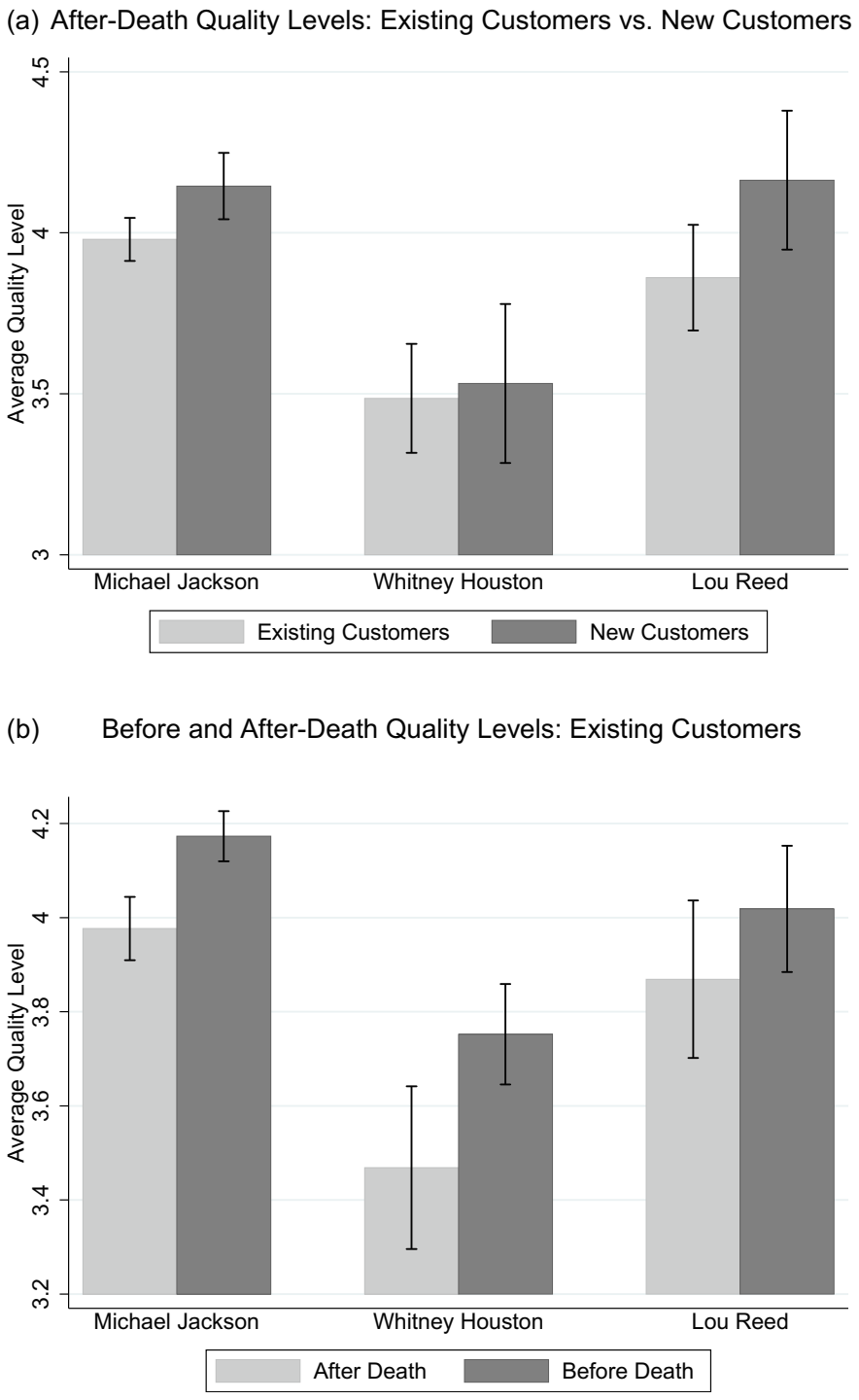


Fig. 2 Quality consumption levels. **a** After-death quality levels: existing customers versus new customers panel, **b** before and after-death quality levels: existing customers

where *ADPurchase* is an indicator variable that equals 1 if participant *i* purchased at least one album of the artist after death. *Affect* is a factor that comprises the three emotional items previously discussed. Factor loadings for all items were above 0.70. Similarly, *Information* is a factor that we construct from participants agreement to the statement that the artist's death had increased their awareness about the artist's music, as well as to statements that they had become more familiar, more experienced, or more knowledgeable of the artist's music after death. Factor loadings for all items were above 0.80. Finally, *BDPurchase* is an indicator variable that equals 1 if participant *i* purchased at least one album of the artist before death. As existing customers have systematically higher values for *Affect* and are likely to show a higher propensity to purchase after death, it is important to control for this variable. As each participant answered questions for each artist, we adjust standard errors for clustering on the participant level.

When pooling the responses for Michael Jackson, Whitney Houston, and Lou Reed, we find that both *Information* and *Affect* significantly increase the probability of an after-death purchase. However, in line with our previous findings, we find that the marginal effect of *Information* is significantly higher than the marginal effect of *Affect* ($Chi^2=3.38$, $p=0.066$). In addition, and as expected, we find that existing customers have a higher probability to buy products after death. Overall, these findings corroborate our previous insight that information-based motives are relatively more important for after-death consumption than affective-based motives.[7]

6 Conclusion

Using weekly sales data for 446 albums from 77 dead artists in the U.S. music industry, we find that after-death sales are 54.1 % higher in the 4 months after death than in the 4 months before death. In addition, we find that the relative increase in sales after death is higher for the better albums of an artist, even after controlling for weekly album-level publicity. These findings indicate that death-related publicity serves primarily as informational advertising that informs new customers who are likely to buy the artist's best albums after death. However, complementary survey evidence reveals that death-related publicity also triggers considerable affective reactions and personal mortality salience from existing customers. According to our theoretical predictions, these customers should attach greater value to owning previously non-purchased products of the artist after death. This is exactly what we find: Relative to their purchases before death, existing customers purchase albums of significantly lower quality after death.

A key implication of our findings is that customers' information is incomplete even for superstars such as Michael Jackson or Ray Charles. This implies that it is not enough for an artist to be "hot" and "top of customers' minds" at some point in time, but to keep customer awareness consistently high throughout his career. We further

[7] The marginal effects for *Information*, *Affect*, and *BDPurchase* are 0.078, 0.061, and 0.162, respectively. When running separate analyses for each artist, we always find positive, statistically significant effects from *Information* and *Affect* on after-death purchases. For Michael Jackson und Lou Reed, we also find that the effect from *Information* is significantly larger than the effect from *Affect* ($p<0.10$ in both cases). The detailed results are available from the authors.

show that retailers should make use of a customer's pre-death purchase history when sending E-mail notifications that feature products of the deceased artist. While a focus on the informative aspect of the death seems appropriate to attract new customers, existing customers are more likely to respond to an emotionally laden message that triggers the need for loss compensation.

In spite of our consistent evidence from two different studies, we do not suggest that informational advertising and affective responses are the *only* motives for after-death consumption. For example, Cialdini (2008) discusses evidence that people increase their product valuations when products become scarce. While scarcity should be a secondary effect in cultural markets where products are reproducible, we cannot rule out the idea that some customers might (mistakenly) expect the deceased artist's products to become scarce. Similarly, some customers might purchase products as a social proof or informational social influence. That is, the mere fact that many people are buying the artist's products after death is what leads others to purchase the products themselves. While this motive alone cannot explain our different findings for new and existing customers, we cannot rule out its explanatory power for the behavior of some customers.

An interesting avenue for future research would be to build on our finding that death-related publicity serves primarily as a form of informative advertising. Researchers have long emphasized that such advertising increases competitiveness across firms (e.g., Nelson 1974). In cultural markets, this would imply that products of deceased artists steal market share from the products of other artists. The reason is that previously uninformed customers are now able to make better, informed decisions, causing them to switch from the products of other artists. In contrast to such patterns of substitution, it could be that death-related publicity leads to an overall increase in demand for products in the same category, because customers would simply add the albums of the deceased artist to their order. An empirical analysis that helps to discriminate between both scenarios would be of great relevance for publishers, movie studios, and music labels. This is just one path for future research that promises to enrich our understanding of death-related effects as a regular phenomenon in cultural markets.

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