



Journal Club, 11 March 2008

Is being a rock star a risky business?

Lorenzo Pezzoli
Epiet Fellow at Cfl

Appraisal of:

RESEARCH REPORT

Elvis to Eminem: quantifying the price of fame through early mortality of European and North American rock and pop stars

Mark A Bellis, Tom Hennell, Clare Lushey, Karen Hughes, Karen Tocque, John R Ashton

Introduction

- Pop and rock star lifestyle characterised by:
 - high levels of stress
 - drug/alcohol abuse
 - mental health conditions
 - accidents
 - depression
 - STIs...
- Leads to premature death

- But is that really true?
- Quantitative studies absent
- Possible perception bias due to high media coverage

Kurt Cobain's troubled last days

Drugs, guns and threats; and then he disappeared

By Dennis Whalen
 Seattle. Three days before the band's final show, Kurt Cobain bought a shotgun, had some drug treatment, fought with his wife and "started to fall behind," according to his health and police reports.
 Cobain, 27, now 40 miles off the coast from Seattle had spent hours before his death, now found dead of an apparently self-inflicted gunshot wound, at his home in Everett.
 Gary Hersh, the musician who found the body, said it is a "shocking" discovery that he heard a gunshot and that Cobain had "fallen over."
 Just a month before his death, Cobain had been in a hospital for a week.



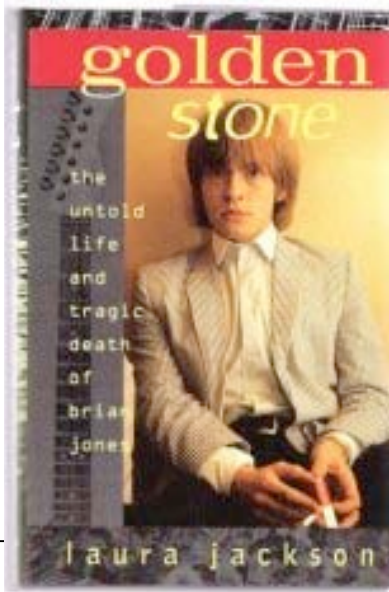
October 6, 1970

Death of Janis Joplin Attributed to Accidental Heroin Overdose

By GEORGE GENT

The big man with the big sound, John Henry Bonzo Bonham is the godfather of hard rock drumming, and he remains an idol to legions of Led Zeppelin and heavy metal fans worldwide. Courtied away from more lucrative offers, Bonham joined the newly formed Led Zeppelin in 1968, helping guitarist Jimmy Page and vocalist Robert Plant create such famous songs as Stairway to Heaven and Kashmir. The hard-working, hard-living Bonham became the source of many enduring legends in rock music and pop culture. His sudden death in 1980 led to the immediate demise of Led Zeppelin, though the group's popularity lives on today. Bonham's work has been emulated and sampled, inspiring generations of rock musicians.

1948-05-31 - 1980-09-25



Jimi Hendrix Dies; Overdose Blamed

LONDON (UPI) — Jimi Hendrix, the 27-year-old guitarist, died of a heart ailment, police doctors said today, after a night of heavy partying in London. Hendrix was found dead in a London hotel at 11:30 a.m. and died about one hour later.

The police officers said the American musician, of whose two bodies one body part was identified as Jimi Hendrix, died at 11:30 a.m. and died about one hour later.

They said an autopsy at an unnamed hospital, apparently the cause of death, but that a coroner will issue the final verdict.

A hospital spokeswoman said at first that Hendrix was dead at 11:30 a.m. but later said he died at 11:30 a.m. and died about one hour after admission.

The fact Hendrix had been in London for a week and he had not been visiting London, she had been staying at the Grosvenor Hotel, she said a hotel spokesman said Hendrix had been very close to death.

Hendrix, about 27, was seen three days before his death in London. The spokesman, who said Hendrix had been in London for a week, said a hotel spokesman said Hendrix had been very close to death.

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KING OF QUEEN

Freddie Mercury, the lead singer of the rock band Queen, is shown in a crown and a red and white outfit, holding a microphone. To the left, a smaller photo shows the four band members. Above, two photos show Freddie Mercury performing on stage, one with his arms raised and one playing a guitar.

AIM

- Using a cohort of famous musicians
- Compared survival rates from the point of fame to survival of general population in North America and Europe
- 1. to examine health prospects of this population and their +/- contributions to public health
- 2. to test a novel methodology for examining survival in specific populations

Methods I

- Cohort of pop stars
- Inclusion:
 - Being a group member or a solo performer with an album listed in the “All-Time Top 1000 Albums” (international survey of 200 000 experts, critics or fans conducted in 2000)
- Exclusion:
 - Country, Blues, Jazz, Vocal, Celtic, Folk, Bluegrass
 - Compilation albums and soundtracks
 - Outside North America or Europe

Methods (Descriptive)

- Age
- Sex
- Race
- Year of fame (earliest date of chart success or release date of the album in the “All-Time Top 1000”).
- Musical Genre
- Survival status on 31 December 2005
- Date and cause of death (if dead)

- Collected from specific literature and internet

Methods (Analytical)

- Years of survival since year of fame compared to the expected survival in the general population
- Actuarial survival method (or age standardised survival)
 - Matches each artist with an “average individual” from the general population of the same age, sex and race as the pop-star in the year of fame
- Kaplan Meier survival curves
- Mann Whitney U tests and chi square used for other comparisons
- Reference survival probabilities
 - Europe: UK historic cohort life tables
 - North-America: US decennial life tables

Results I

- 1064 pop stars
- Earliest year of fame 1956, Elvis Presley
- Latest year of fame 1999, Eminem
- 100 deaths

Table 2 Characteristics of pop stars sample by geographical region

Characteristics	Total	Europe	North America	p*
Sample size (n)	1064	503	561	
Main country (%)	UK and USA, 94.64	UK, 94.43	USA, 94.83	0.773
Year of birth (median)	1957	1957	1956	0.597
Year of fame (median)	1981	1980	1985	0.164
Male (%)	90.98	92.25	89.84	0.171
White (%)	88.53	97.02	80.93	<0.001
Pop genre (%)				
Rock	89.76	94.83	85.2	<0.001
R&B	3.85	0.4	6.95	<0.001
Electronica	1.88	3.38	0.53	<0.001
New age	0.38	0.8	0	0.106
Punk	0.28	0.6	0	0.21
Rap	3.85	0	7.31	<0.001
Dead 31/12/2005 (%)	9.4	5.57	12.83	<0.001
Likely cause of death (% of dead)				
Chronic disorder (drug/alcohol)†	8	3.57	9.72	0.544
Drug/alcohol overdose	19	28.57	15.28	0.128
Accident (drug/alcohol related)	4	7.14	2.78	0.665
Other accident	16	21.43	13.89	0.535
Suicide	3	3.57	2.78	0.657
Violence	6	3.57	6.94	0.867
Cardiovascular disease	14	3.57	18.06	0.12
Cancer	20	21.43	19.44	0.823
Other	10	7.14	11.11	0.823

*p (probability) describes differences between North American and European pop stars. Medians are compared using Mann Whitney U tests, while percentages are compared using χ^2 .

†Chronic drug and alcohol disorders include liver, kidney and gastrointestinal diseases explicitly linked with substance use. Many of those deaths classed as suicides, violence related and other accidents, while likely to be linked with substance use, have only been categorised as alcohol- and drug-associated where references specifically detailed the link.

Results II

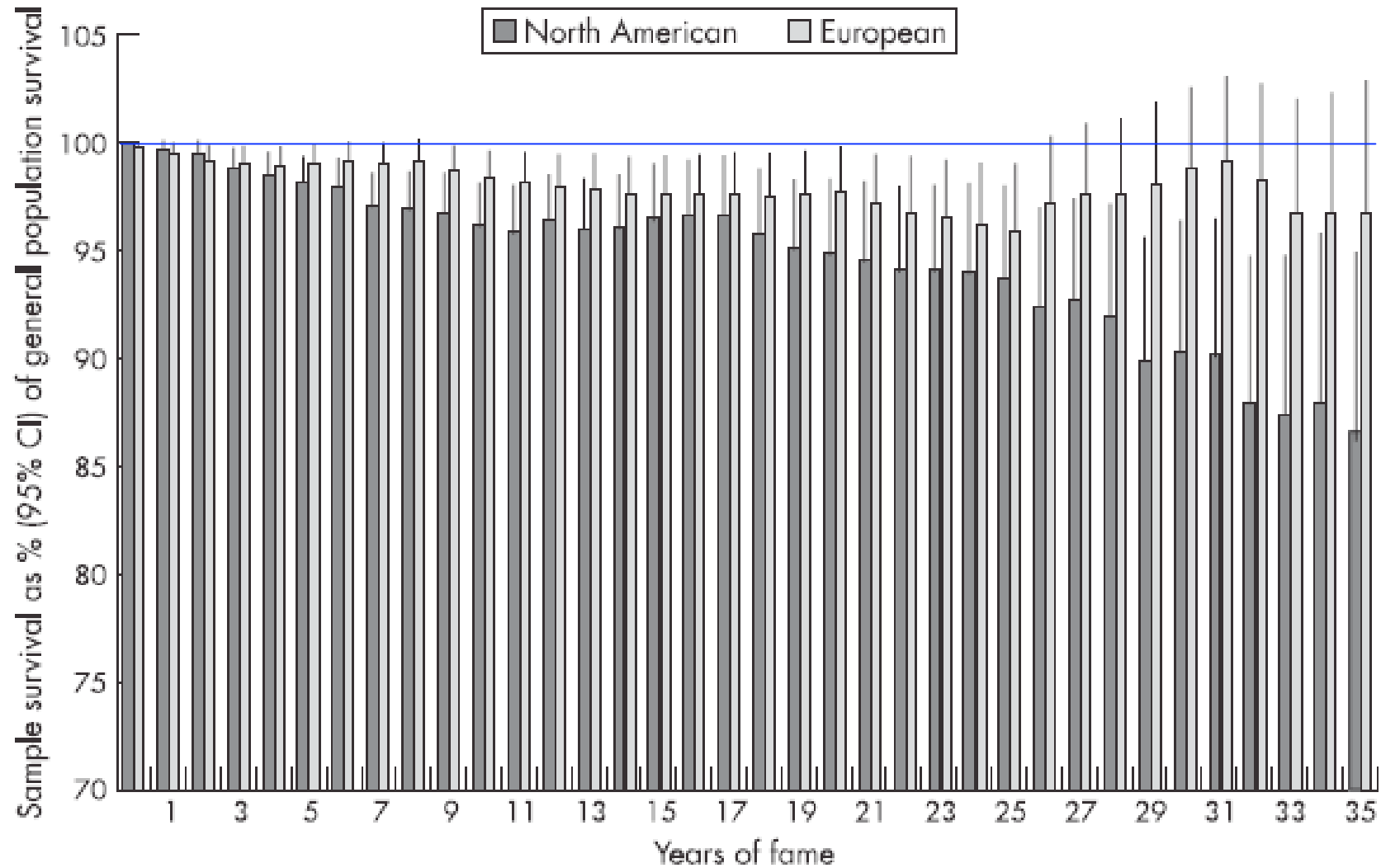
- Overall mortality in pop stars
 - North American: 12.83%
 - European: 5.57% ($p < 0.001$)
- 9.6 % of men died, 7.3% of women
- Mortality North American Pop stars:
 - mortality for non-white 16.82%
 - whites 11.89% ($p = 0.170$)
- Mortality stratified by white pop stars was still lower in European pop stars (5.74%)
- Mortality at 5 years post fame
 - 3.5% if famous before 1980
 - 1.6% if famous afterwards

Table 3 European and North American pop stars' crude mortality and mortality ratio relative to the general population by years of fame

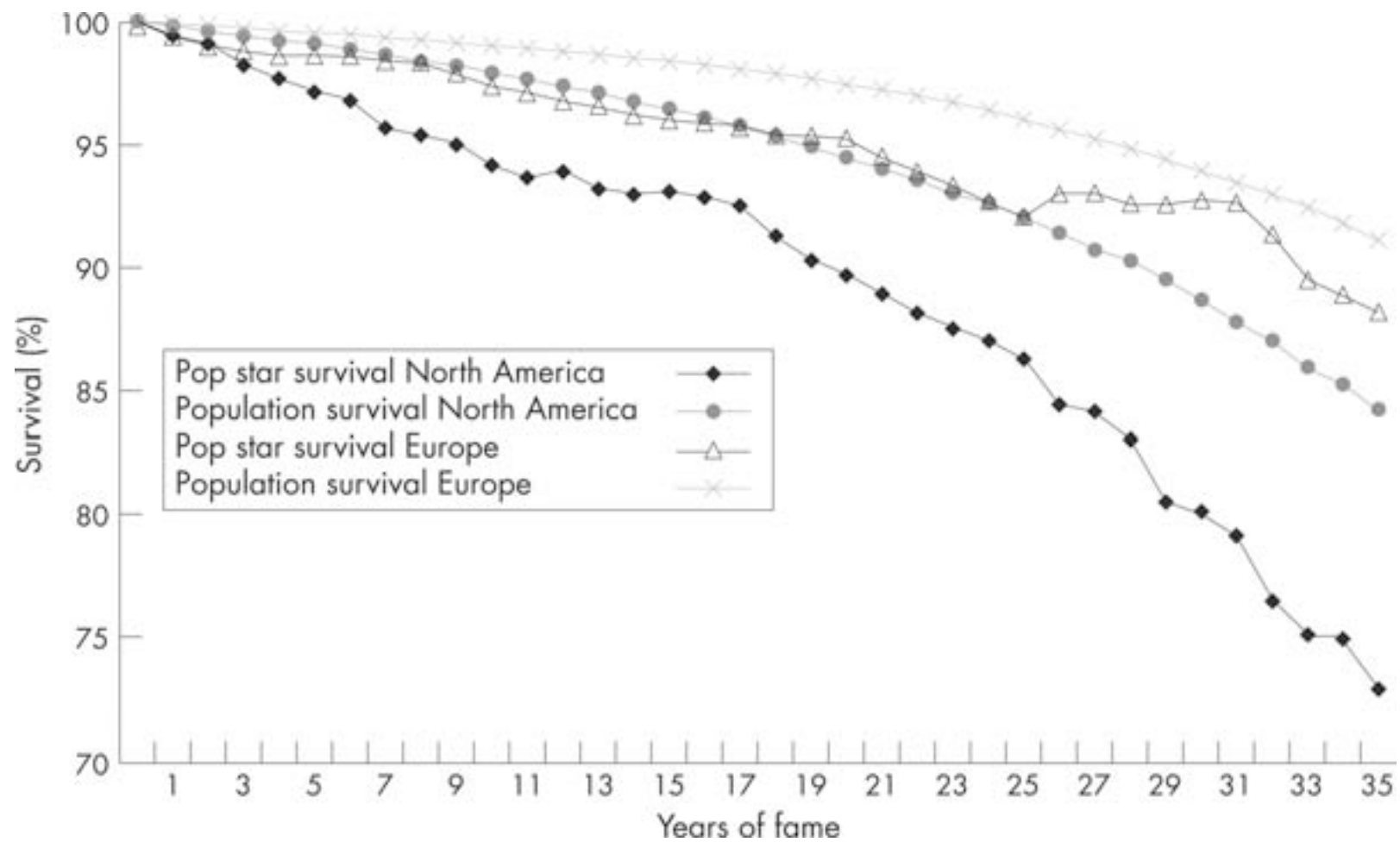
	Years of fame	Sample size	Average age (years)	Survived	Died	Sample mortality	Lower 95% CI	Upper 95% CI	Reference mortality*	Mortality ratio
European	0	503	24	502	1	0.20	0.01	1.10	0.00	NA
	5	503	29	496	7	1.39	0.56	2.85	0.46	3.05
	10	457	34	445	12	2.63	1.36	4.54	0.98	2.68
	15	375	39	360	15	4.00	2.26	6.51	1.63	2.46
	20	337	44	321	16	4.75	2.74	7.60	2.56	1.86
	25	253	48	233	20	7.91	4.90	11.94	3.97	1.99
	30	152	53	141	11	7.24	3.67	12.58	6.08	1.19
	35	102	58	90	12	11.76	6.23	19.65	8.85	1.33
North American	0	561	26	561	0	0.00	0.00	0.66	0.00	NA
	5	561	31	544	17	3.03	1.77	4.81	0.98	3.10
	10	495	36	466	29	5.86	3.94	8.32	2.08	2.82
	15	362	40	337	25	6.91	4.52	10.03	3.57	1.93
	20	291	46	261	30	10.31	7.06	14.39	5.49	1.88
	25	262	50	226	36	13.74	9.81	18.51	7.96	1.73
	30	196	55	157	39	19.90	14.55	26.18	11.30	1.76
	35	144	59	105	39	27.08	20.02	35.11	15.77	1.72

*Reference population mortality is calculated from published UK cohort life tables for European populations and from cohort life tables calculated from US decennial (period) life tables for North America (see Methods section for details).

North American and European pop stars: age-standardised relative survival by years of fame.



Comparative survival curves for North American and European pop stars and demographically matched general populations.



Results III

- 2-25 years post fame post fame North American and European pop stars have 2-3 times the risk of dying compared to general population
- At 25 years post fame European pop-star mortality tends to return to population levels
- North American mortality remains high

Typical situation in Europe...



"I have a lot in common with Cliff Richard.
Same birthday, same age..."

Discussion

- Why is mortality in American pop stars higher also 25 years post fame?
 - Reaction to fame may be different
 - Cause of death is different
 - North American pop stars are more likely to suffer chronic conditions that claim life later
 - Health care for old impoverished pop stars may be worst in USA

Possible limitations

- Sample from a specific international survey
- No established criteria for fame (level of fame?)
- Using earlier date of chart success is objective but may have reached fame before that or after
- Cause of death from popular literature (430 websites, books, and other sources)
 - May be contentious
 - Deaths in older pop-star may be unnoticed/unpublished
- US and UK population registers as proxies for North America and Europe

Conclusions

- Disproportionate amount of mortality related to alcohol and drugs
- Pop stars' health should be addressed
 - For their benefit
 - And they are an example (1 child out of 10 in the UK wants to be a pop star)
- They should
 - stop promoting health damaging behaviours
 - act as positive health motives
- The technique used proved effective to estimate mortality when no appropriate population denominator data is available

Appraisal

- Interesting and unusual topic
- Good idea to use data in the public domain for analytical epidemiology

Appraisal

- Aim is very broad
- Would prefer if they stated the hypothesis to test
- Is it necessary to quantify mortality in rock stars to influence policy if it is perception more than reality which impacts on society?

- Not very clear from the paper how they used the population registers to extract the “matched population”
- Not tested if survival curves differed significantly
- Cohort definition
 - Difficult to exactly qualify nationality for this population.
 - From a survey published by Virgin
- Can you trust all the information in the public domain?

Application Number: 201102226



REGISTRATION OF DEATHS ACT 1953
SECTION 1(1) - A DEATH IS TO BE REGISTERED IN THE DISTRICT IN WHICH THE DECEASED PERSON WAS USUALLY RESIDING AT THE TIME OF HIS OR HER DEATH.

Q0X 196635

CERTIFIED COPY

OF AN ENTRY

DEATH		Entry No. 25
Register Office: Kingston and Chelsea Rapid Borough of Kingston and Chelsea <small>Register Office: Kingston and Chelsea</small>		
1. Date and place of death Twenty fourth November 1991 Garden Lodge, 1, Logan Place, W 8		
2. Name and surname Frederick Mercury Frederick BUSAKA		3. Sex Male
4. Date and place of birth 5th September 1946 Zanzibar		
5. Occupation and usual address Musician Garden Lodge, 1, Logan Place, W 8		
6. Full name and address of informant Robert Richard Leslie FREESTONE		7. Qualification Causing the body to be cremated
8. Usual address Garden Lodge, 1, Logan Place, W 8		
9. Cause of death 1a. Bronchopneumonia ± AIDS Certified by F. G. Atkinson MBCh B.		
10. I certify that the particulars given to me above are true to the best of my knowledge and belief. F. Sicester Registrar		
11. Date of registration Twenty fourth November 1991 M. Lyons Registrar		

CERTIFIED to be a true copy of an entry in the certified copy of a register of Deaths in the District above mentioned. Given at the GENERAL REGISTER OFFICE, under the Seal of the said Office on 24th February 1992

This certifies that the particulars given to me above are true to the best of my knowledge and belief. I am a Registrar in the District of the said Office and I am duly qualified to give this certificate. I am not a member of any other office.



Appraisal

- “Genius and madness”
- Fame causes mental problems?
- Or can mental problems lead to fame?

- Why a reduction in pop star mortality after the 80s?
 - Change of socio-economic background
 - Reaction to fame
 - Already famous and used to it (parents were artists)

Appraisal

- Potential confounders not included (e.g. socioeconomic background)

Risky behaviour can be a bad example for fans



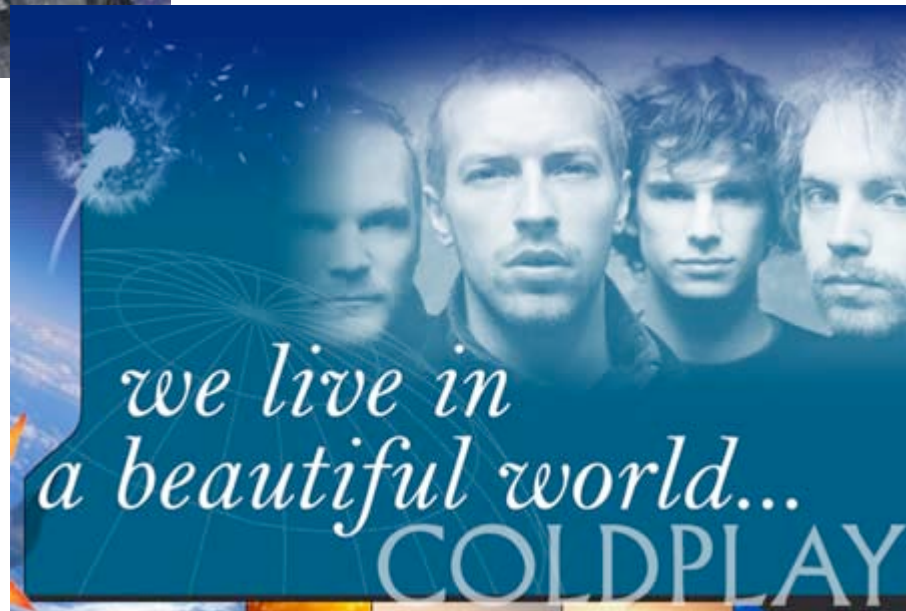
Reuters / Luke MacGregor

Should we use rock stars in health communication campaigns?

- They may appeal to young people because they are rebels
- Who wants to take the responsibility for dissolving the “Sex, drugs and rock and roll” myth that make them so appealing?
- And is it really possible?



Some rock stars
may be more
willing and
suitable...





...than others.



Novel method

- The method works only if you can define the cohort
- Similar study measured mortality in soap opera characters (Crayford et al. 1997, BMJ)
- What about the more numerous non-famous rockers? They may be at risk too not have any money to deal with it
- Difficult to define a cohort in this case
- Wannabe pop stars (1/10 child in UK)?

- Other famous populations seem to suffer higher mortality also



Former Playmate Smith dies at 39

The flamboyant former model Anna Nicole Smith has died near Miami, Florida at the age of 39, her lawyer has said.

Ms Smith, a former Playboy bunny, married Texas oil billionaire J Howard Marshall II in 1994 when she was 26 and



Heath Ledger Found Dead

UPDATE Posted Tuesday, January 22, 2008 09:38 PM EST
Originally posted Tuesday, January 22, 2008 04:45 PM EST



Heath Ledger, the actor transformed from Australian nominee and dogged his Manhattan residence police spokesman con

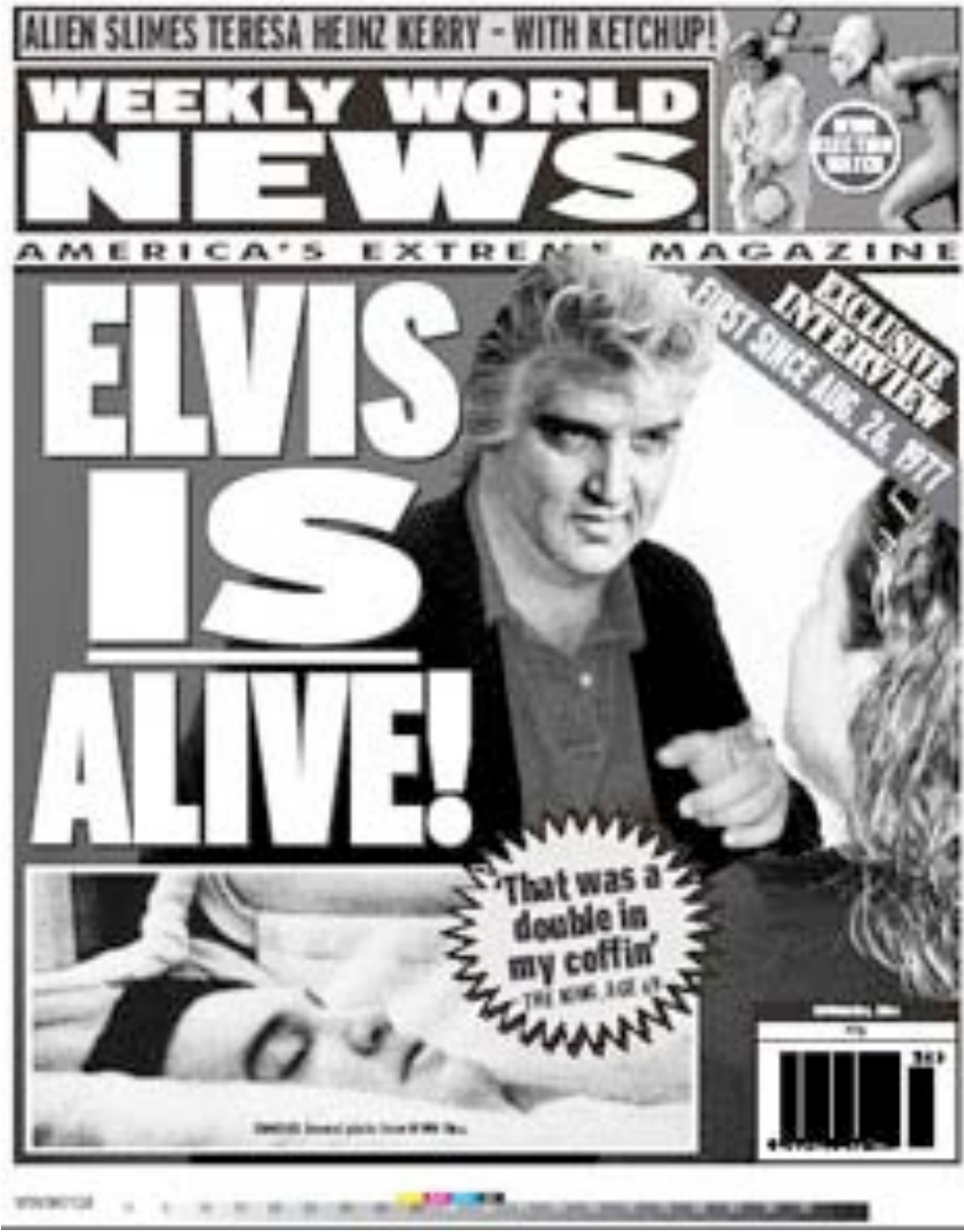
Police say the death is related and that "press found near his body."

Ledger was found in an apartment around 3:30 housekeeper and a man arrived for an appointment saw.

Ledger was nude, lying

Heath Ledger on Nov. 13
Photo by Brian Kogut / AP





Thank you
for your
attention