

# Comparing apples and oranges: a randomised prospective study

James E Barone

For many years the comparison of apples and oranges was thought to be impossible. Many authors use the analogy of the putative inability to compare apples and oranges as a means of scornfully reviewing the work of others. The titles of some recent publications<sup>1 2</sup> suggest an actual comparison of apples and oranges, but the authors do not, in fact, compare these two fruits. Our laboratory has been interested in this problem for many years. We attempted numerous pilot studies (unpublished data) but had not accomplished a true comparison until now. At last, successful comparison of apples and oranges has been achieved and is the subject of this report.

## Methods and results

We investigated many different varieties of apples and oranges in pilot studies; for this study, however, red delicious apples were compared with navel oranges. A total of 12 objects (6 apples, 6 oranges) made up the experimental population. Measurements were performed using a standard tape measure (Pseudoscientific Instruments, Lodi, NJ). Weight was recorded to the nearest tenth of a gram using a scale. Sweetness was quantified by the Licker scale (1 = kind of sweet; 2 = sweet; 3 = very sweet; 4 = really very sweet). Statistical calculations were performed using FudgeStat (Hypercrunch Corporation, Sunnyvale, CA) on an Apple Macintosh 8500 computer (Apple Computer Inc, Cupertino, CA). No significance should be inferred from the type of computer used, nor was any bias introduced because of this. Six oranges and five apples survived the experiment. (Before the study was completed, the author's 12 year old son, Thomas, inadvertently consumed one of the objects, an apple.) Non-parametric background comparisons are shown in table 1. A striking and heretofore unappreciated similarity was noted. In only one category, that of "involvement of Johnny Appleseed," was a statistically significant difference between the two fruits found.

Subjective findings and objective data are presented in table 2. A significant difference between apples and oranges was identified only in the categories of colour and seeds.

## Comment

The study reported herein represents a breakthrough in the comparison of apples and oranges. These two fruits appear to have many features in common, as we noted differences in only three of 15 areas.

A Medline search found 52 publications unrelated to the actual study of fruit with the words "apples" and "oranges" in their titles; most are letters to the editor or editorials. Articles in the medical literature on the subject of apples and oranges are increasingly being published (see figure). Every one of these studies asserts

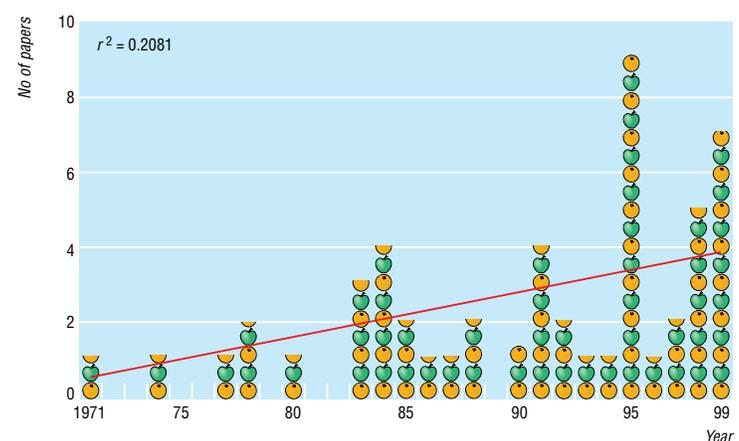
**Table 1** Non-parametric background fructological information

	Apples	Oranges
Grown in orchards	Yes	Yes
Flowering trees	Yes	Yes
Considered a fruit	Yes	Yes
May be eaten	Yes	Yes
May be made into juice	Yes	Yes
Subject to damage by disease	Yes	Yes
Subject to damage by insects	Yes	Yes
Involvement of Johnny Appleseed*	Yes	No

\*P<0.01.

**Table 2** Subjective and objective comparison of apples and oranges

	Apples	Oranges	P value
Colour	Red	Orange	0.03
Sweetness	2+	2+	NS
Shape	Sphere	Sphere	NS
Mean (SD) circumference (cm)	25.6 (2.3)	24.4 (2.6)	NS
Mean (SD) diameter (cm)	7.9 (0.6)	7.6 (0.7)	NS
Weight (gm)	340 (87)	357 (760)	NS
Seeds	Yes	No	0.03



Incidence of "apples and oranges" in the medical literature

**Table 3** Actual subjects of selected papers purported to be comparisons of apples and oranges

Title of paper	Actual subject
Comparing apples with oranges <sup>1</sup>	Generalists and specialists
Comparing apples to oranges <sup>2</sup>	Desflurane and propofol
Apples and oranges <sup>3</sup>	Emergency medical systems
Apples and oranges: flaws and guffaws <sup>4</sup>	Salmeterol and ipratropium
Comparing apples and oranges in the Plio-Pleistocene: methodological comments on meat-eating by early hominids at the FLK 22 Zinjanthropus site, Olduvai Gorge (Tanzania): an experimental approach using cut-mark data <sup>5</sup>	Self explanatory

Stamford Hospital,  
Stamford, CT  
06904, USA

James E Barone  
*surgeon in chief*

drjbarone@  
stamhosp.chime.org

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that a comparison of apples and oranges is impossible. At first glance, some papers seemed to have addressed the important topic of a real comparison of apples and oranges. Table 3 reveals the truth.

This article, certain to become the classic in the field, clearly demonstrates that apples and oranges are not only comparable; indeed they are quite similar. The admonition "Let's not compare apples with oranges" should be replaced immediately with a more appropriate expression such as "Let's not compare walnuts with elephants" or "Let's not compare tumour necrosis factor with linguini."

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- 1 Johnson W. Comparing apples with oranges. *Arch Intern Med* 1998;158:1591-2.
- 2 Lubarsky DA. Comparing apples to oranges. *Anesth Analg* 1995 Aug;8:428-9.
- 3 Cummins RO, Hazinski MF. Apples and oranges. *Ann Emerg Med* 1999;33:602-3.
- 4 Petty TL. Apples and oranges: flaws and guffaws. *Chest* 1999;116:1137-8.
- 5 Monahan CM. Comparing apples and oranges in the Plio-Pleistocene: methodological comments on meat-eating by early hominids at the FLK 22 Zinjanthropus site, Olduvai Gorge (Tanzania): an experimental approach using cut-mark data. *J Hum Evol* 1999;37:789-92.

## How not to give a presentation

Richard Smith

BMJ, London  
WC1H 9RJ  
Richard Smith  
editor

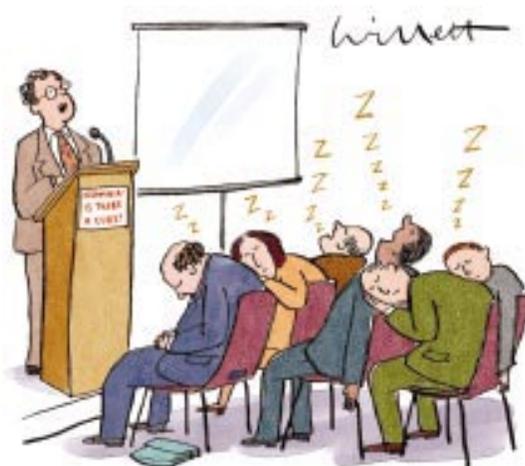
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The invitation arrives. You are invited to speak on the same programme as the Pope, Bill Clinton, and Madonna. Beside yourself with excitement, you forget that you've had these sort of invitations before—and that, for some strange reason, none of the famous people ever turn up. They are all replaced by people you've never heard of and who turn out to be even more boring than you. Having accepted the invitation, you get your own back by forgetting it completely. Two years later, 15 minutes before you are due to start speaking in Florence, you receive a telephone call in your office in London asking where you are.

"I'm sorry," you answer lamely, "I forgot."

"Don't worry," answers the cheery voice at the end, "We'll just ask Madonna to speak for 20 minutes longer. The audience of world leaders will be disappointed you're not here, but extra Madonna will be some compensation."

Far from ruining this presentation, you may have improved the world leaders' conference. But forgetting altogether that you agreed to speak is a good way to make a mess of your presentation. A variant is to arrive late. Don't arrive too late because they will simply have cancelled your session, probably sending a thrill of pleasure through an audience facing the prospect of five consecutive speakers.



### Preparing for a bad presentation

One way to prepare for a bad presentation is not to prepare at all. Step up to the platform, open your mouth, and see what comes out. With luck, your talk will be an incoherent ramble. This is, however, a high risk strategy because spontaneity may catch you out. Most medical presentations are so premeditated that spontaneity may inspire both your audience and you. Inspiration must be avoided at all costs. Similarly you might be caught out by truth: "I've been asked to promote this new drug, but actually I'd be fearful of throwing it into the Thames because it might poison the few shrivelled fish that survive there." Truth is compelling to an audience, even if mumbled.

A really bad presentation needs careful preparation. A useful standby is to prepare for the wrong audience. If asked to speak to Italians speak in German. If the audience is composed of 15 year olds then prepare a complex talk that would baffle a collection of Nobel prize winners. It's much the best strategy to give an over-complicated presentation. "Nobody ever lost money underestimating the public's intelligence," said Barnum, Richard Nixon, or somebody, and so you may be surprised by how well your grossly oversimplified presentation is received by your audience of professors.

Be sure to prepare a presentation that is the wrong length. Too long is much the best. Most of the audience will be delighted if your talk is too short, not least because it may provide more opportunity for them to hear their own voices. But something that is too long always depresses an audience, even if what you are saying is full of wit and wisdom.

Another trick is to ignore the topic you are given. Simply give the bad presentation that you have honed to the point of perfection by deleting anything that raises a flicker of interest. With luck, most of the audience will have heard it several times before.

You may be able to enhance your bad presentation by sending the organisers in advance a long and dull curriculum vitae. Your presentation may then be prefaced by the chairman reading out your whole boring life story in a monotone. If you are lucky you might find yourself beginning your presentation after you were supposed to finish.