

# The Journalist Method in Science Education – An Example on Musk Fragrances in Shower Gels

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## Instructions for the journalist method

The discussion of the use of synthetic musks and the various perspectives from which this application can be described is introduced via the journalist method. Pupils are supposed to work in groups to create a short news story just like a journalist on an editorial staff. Each news ticker perspective is covered by two groups of 2-3 students, so that there are two stories for each viewpoint. This approach clearly reveals to the students that even stories based on the same beliefs and using the same source material can often turn out very differently. The source of information in this case comes in the form of a news ticker like those employed by professional news agencies. Short reports on a topic stemming from a variety of sources are presented by the ticker. All of the pupils are integrated into the presentation of the story. They also receive a feedback questionnaire which uses "smilies" to rate the report's factual accuracy, its persuasive power and its physical presentation. In a final reflection period the pupils are supposed to express their own ratings and opinions about the problematic nature of the topic.

## Overview of the Procedure

1. formation of 8 groups of pupils and distribution of the news tickers
2. production of the news reports (circa 40 minutes)
3. distribution and short discussion of the feedback questionnaire (circa 3 minutes)
4. presentation and short discussion of the news stories (circa 20 minutes)
5. closing discussion (circa 30 minutes)

Group	Perspective of the news ticker	Description
A1/A2	consumer protection	test results and concern about human contact with potentially hormone-active and allergenic substances
B1/B2	cosmetics industry	cost pressure and selling a competitive product
C1/C2	environmental groups	the effects of synthetic musks on the natural world
D1/D2	water industry	the problems and costs of water treatment

## Impulses and Questions for the closing discussion

- Real problem or hype? The level of danger for humans has not yet been clarified in detail. Many "natural" substances might be even more dangerous than synthetic ones.
- Which possibilities for solving the problem might come into consideration? How could a change be carried out and how realistic is such a shift?
- What would outlawing these substances mean? Forbidden substances are often replaced by even less-proven materials.
- Which role should lawmakers play in this discussion? Which substances should be outlawed and when? Wouldn't too stringent regulations be putting our own companies out of business? Cheaper import goods possibly contain the same substances.
- Which dangers are we as a society ready to accept? How can we as lone consumers act, when there is no mandatory obligation to declare what ingredients are in a product?
- What would renovating water treatment plants cost in order to remove these substances from wastewater? Would many problems actually be solved by doing this? Who should shoulder the costs for such measures?
- ...



Imagine that you are journalists at RTL News and receive the following messages in the editorial department! Use them to make a news report approximately 60 seconds long!

*News messages:*

Source: [www.greenpeace.at](http://www.greenpeace.at) Greenpeace Austria  
11.11.5 4:03

... Humans can assimilate musk fragrances through the foods they eat. Musks are especially prevalent in fatty fishes. Human breast milk can also contain musk fragrances....

Source: [www.greenpeace.at](http://www.greenpeace.at) Greenpeace Austria  
11.11.05 2:28

...Consumers have no way of confirming whether artificial musks are in a product or not. It is not mandatory for producers to provide a legally-binding declaration of exactly what is in their products.

Source: [www.verbraucherschutz.de](http://www.verbraucherschutz.de) consumer protection agency Germany  
Datum: 28.02.06

....Musk compounds exist in almost every product, whether we are talking about soaps, perfumes, or other detergents which spray fragrances into the air. Most consumers these days are not willing to abstain from the use of certain scents. Oftentimes, they do not even realize which dangers are involved and, even then, accept them as par for the course...

Source: [www.verbraucherschutz.de](http://www.verbraucherschutz.de) consumer protection agency Germany  
Datum: 02.03.06

..Breast milk samples were tested for musk compounds, because such substances are detectable due to their persistence (high chemical stability) even after long periods of time. These substances are stored in the food chain and therefore end up in the human body. Musk compounds were detected in the tested samples...

Source: die Umweltberatung (Environmental Consulting)  
Datum: 07.03.06 7:12

..These substances are suspected of causing cancer and damaging DNA or the central nervous system. Certain compounds can also lead to allergic reactions or skin damage under the influence of light-induced reactions. Up until now only three of these substances have been forbidden for cosmetics: nitromusk ambrette, nitromusk moskene, and nitromusk tibetene...

..The number of people suffering from an oversensitivity to many chemicals is constantly growing. The unlisted, artificial musk compounds present in various products represent a problem for this segment of society...

Source: Bayerischer Rundfunk (Bavarian media)  
11.11.05 00:12

...It is already known that musk fragrances in cosmetic products can cause health problems. These substances are also widespread in shower gels. Only a few of the musks have been forbidden up to the present, while maximum concentrations or time limits have been placed on others until research can clarify the issue...



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*News messages:*

Source: <http://www.wwf.de/naturschutz/arten/bedrohte-arten/moschustier/>  
11.11.5 8:17

...“relief just the same: Europe's perfume industry today - in contrast to the last few centuries - almost exclusively uses artificially-manufactured musks.”...

Source: The Body Shop catalog 2005  
11.11.05 6:18

With White Musk we created a fragrance which became a worldwide best-seller. But we are proud of our fragrance for another reason: It was the first perfume to be made with synthetic musk and protect the musk deer.“

„It is especially popular in central Asia, where the musk deer lives, and he is happy when we leave him alone.“

Source: [www.diplomatie.gouv.fr](http://www.diplomatie.gouv.fr) French diplomatic corps  
Datum: 06.03.06

...The perfume industry uses exclusively synthetic musk fragrances and only a few brands contain musk compounds and then only in very low concentrations.

Source: [www.dge.de](http://www.dge.de)  
Datum: 21.02.06

Polycyclic musk compounds represent cheap alternative fragrances for the manufacturing industry. 8,000 Metric tons are produced annually with a rising tendency. Industry does not wish to abstain from the use, for example, of Galaxolide.

Source: [www.bund-bs.de](http://www.bund-bs.de)  
Datum: 06.03.06

....Synthetic musks cover many areas in the perfume industry, which can hardly abstain from their use. If the industry would stop using cheaper alternative fragrances, it would be impossible to cut costs and would endanger jobs.....

Source: [http://www.douglas.de/dgdeeplink\\_process?ref=AFFDEEPR1000&type=product&prodid=717280](http://www.douglas.de/dgdeeplink_process?ref=AFFDEEPR1000&type=product&prodid=717280) perfume shop Douglas  
Datum: 09.03.06

The cult classic among Unisex fragrances: Musk. Cultivated and sexy, oriental and fresh. A scent that unites strength and sensuality through its erotic-dominant note of musk without becoming overpowering. An elegantly soft bouquet of violets, jasmine and roses opens the unusual symphony. The rich musky accent makes itself known in the beat of the heart, which is calmed by the green tones of moss, iris and precious woods. Right from the core musks sensual, dominant aura takes over and gives it such an erotic presence. The longish, puritanical glass bottle with its layered, cylindrical top perfectly underlines the statement and the Unisex demand for a warm, sensual and subtle scent.



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*News messages:*

Source: UMWELTFORSCHUNGSPLAN DES BUNDESMINISTERIUMS FÜR UMWELT, NATURSCHUTZ UND REAKTORSICHERHEIT

(German government's environmental research plan for environment, environmental protection and atomic reactor safety)

13.05.05

... uptake of musk fragrances into plants therefore only plays a role if plants such as carrot root have deposits of e.g. ethereal oils which are in direct contact with the musks...

Source: [www.greenpeace.at](http://www.greenpeace.at)

03.01.05 3:12

...Greenpeace tested rainwater from Holland, Germany and Belgium for various harmful substances and was able to show that artificial musks were present in every sample.

Source: Umweltbundesamt Berlin, Fraunhofer Institut für Molekularbiologie, N.Litz u. J. Müller

Datum: 13.12.05 08.14

.... Despite their having middling toxicities, we must reduce the quantities entering the environment, because polycyclic musk fragrances have been shown to have increased worldwide in fatty tissues, breast milk and the food chains in the oceans. Increases in the soil are also not to be ruled out...

Source: <http://www.uniklinikum-giessen.de/toxi/>

(University clinic in Giessen)

Datum: 21.02.06

...in 1993, 430 Metric tons of synthetic musks made their way into the environment. A switch to macrocyclic compounds which can be quickly decomposed might be one possibility of reducing further accumulation in the environment. Generally stated, however, further research efforts are needed....

Source: [www.ages.at](http://www.ages.at) / Österreichische Agentur für Gesundheit und Ernährungssicherheit

(Austrian agency for health and nutritional safety)

Datum: 3.12.05 9:13

**Ministry of Health:** ".....The committee has come to the conclusion that, according to the present level of scientific knowledge, the use of Galaxolide (a synthetic musk fragrance) in cosmetic products represents no danger for human health. The use of Galaxolide as a scent component in cosmetic products is therefore allowed without conditions.

Source: [www.greenpeace.de](http://www.greenpeace.de)

Greenpeace Germany

Datum: 06.03.06 12:12

...All artificial musk compounds are difficult to decompose and bioaccumulate, meaning that they are increasing in the food chain. They move directly from their applications into groundwater and sewage. Artificial musks are poisonous to important water organisms such as bacteria, algae and small crabs. Therefore they are environmental and marine dangers.



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*News messages:*

Source: Pd. Dr. Kai Bester, e-mail an N. Witte und <http://www.wasser-wissen.de/abwasserlexikon/w/wasserverbrauch.htm>  
07.03.06

One possibility of preparing wastewater (with synthetic musks) for water clarification would be to ozonize it. This procedure costs 4-5 cents per cubic meter of water (Ternes et al., Water Research 2003). We, however, believe that it will actually be more expensive than this. Germans consume a total of roughly 47.1 billion cubic meters of drinking water annually.

Source: Abwasser und Wasserbelastung; Seminar der Professur Ernährungsökologie Uni. Giessen (Wastewater and water burden: seminar by the professor for nutritional ecology of the University of Giessen)  
13.12.05

...according to our own experiments, the introduction of clarified wastewater was identified as the source of the contamination. Musks fragrances enter sewage through the use of cosmetics and detergents. Wastewater treatment plants can only minimally decompose them, so they are introduced into the environment by this means...

Source: Wassergütestelle Elbe der ARGE ELBE, Nessdeich 120-121, 21129 Hamburg (water watchers of the river Elbe in northern Germany)  
06.12.05

...Because synthetic musks are emitted almost exclusively by communal wastewater treatment plants, the results can demonstrate that these substances have been consistently used in consumer products in roughly the same amounts for many years now. They are biologically very difficult to decompose, therefore we can assume that they are accumulating in the environment and, especially, increasing in fish species...

Source: Universität Dortmund, Prof. Dr. Fahlenkamp und Dr. Thomas Ries Lehrbeauftragter im Fachbereich Bio- und Chemieingenieurwesen (University of Dortmund, Prof. Fahlenkamp und Dr. Thomas Ries, teacher trainer for Bio- and Chemical Engineering)  
Datum. 07.12.05

..."Musks" are the real problem." They are supposed to make cosmetics, soaps and washing powders smell better, but at the same time they are very persistent and toxic in larger amounts. "If we want to get these substances out of the water in all of Germany, we will be faced by many things." Because this would cause a further technical revolution among wastewater treatment plants. Millions of cubic meters of wastewater would have to be clarified in painstaking detail in order to filter out hazardous materials in the tiniest of amounts. Ozone would be the most effective - it is injected into the wastewater and literally rips apart tough compounds"....

Source: <http://www.uniklinikumgiessen.de/toxi> (university clinic in Giessen, Germany)  
Datum: 21.02.06

....Musk compounds are persistent (stable) and not very soluble in water. Because of their uses they succeed in entering sewage water.....



**the News at 12**

Think about the different news reports below which you have seen and evaluate each of them with smilies.

: excellent! 
 : very good! 
 : good! 
 : well..... 
 : not so great

	factual believability	persuasive power	presentation
Group A1	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Group B1	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Group C1	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Group D1	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Group A2	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Group B2	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Group C2	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Group D2	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>