

Title of your paper:

Microbeads, Beat it!

Your name:

Mayra Beijer

U189298

1244136

Your email:

m.v.beijer@tilburguniversity.edu

Original paper:

Contributing to Marine Pollution by Washing Your Face: Microplastics in Facial Cleansers

Reference for the original paper:

Fendall, L. S., & Sewell, M. A. (2009). Contributing to marine pollution by washing your face: Microplastics in facial cleansers. *Marine Pollution Bulletin*, 58(8), 1225-1228. doi: 10.1016/j.marpolbul.2009.04.025

Link to original paper online:

<https://www.sciencedirect.com/science/article/pii/S0025326X09001799>

Project created for the class:

Visual Thinking and Composition, Winter 2019

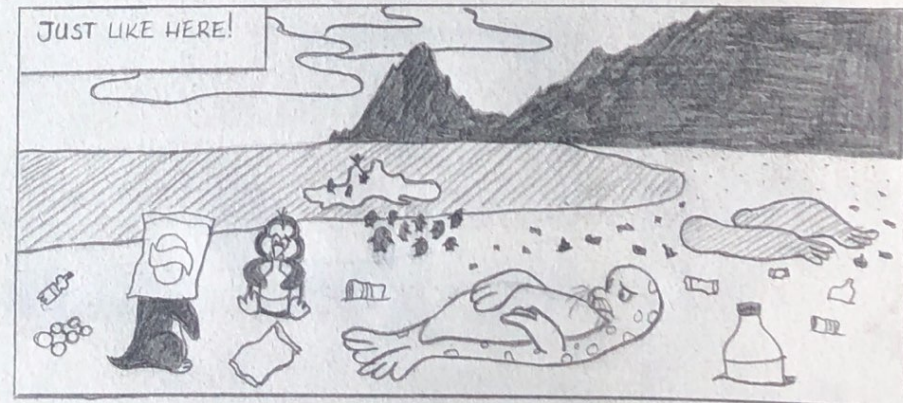
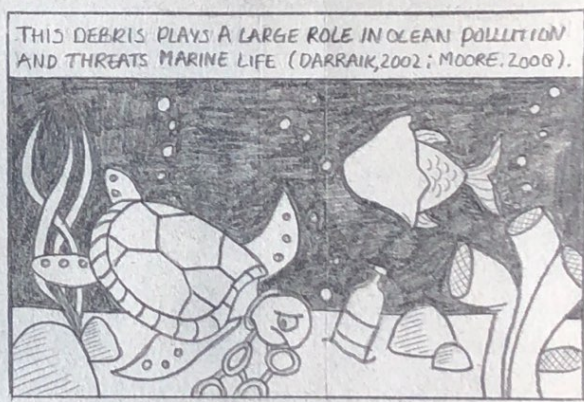
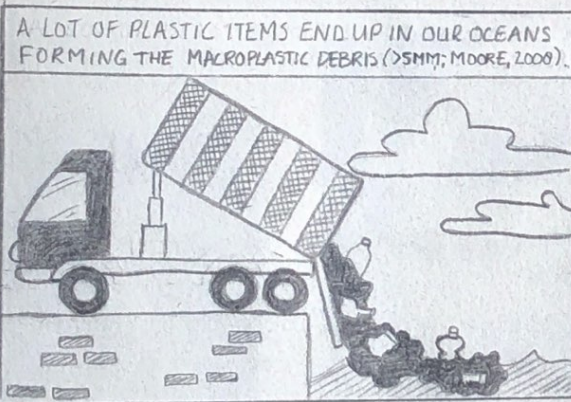
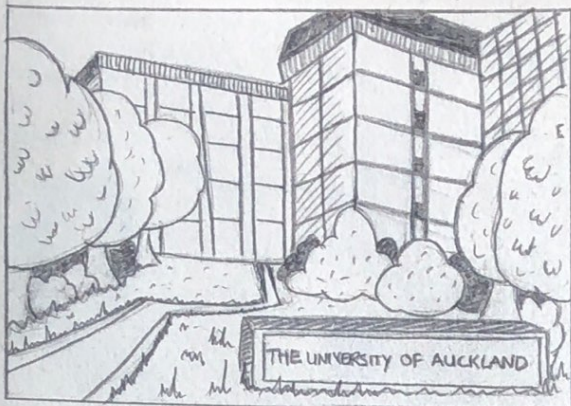
Tilburg University, Department of Communication and Cognition

Instructor:

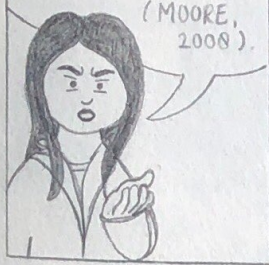
Neil Cohn

neilcohn@visuallanguagelab.com

www.visuallanguagelab.com



BESIDES MACROPLASTICS, THERE ARE ALSO MICROPLASTICS (<5MM) THAT CAUSE OCEAN POLLUTION (MOORE, 2008).



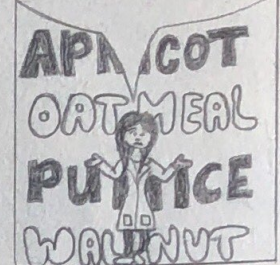
THESE MICROPLASTICS WERE FIRST SEEN AS A SMALL FORM OF PLASTIC POLLUTION...



... IN THE 1990'S IN OCCASIONALLY USED HAND-CLEANSERS (ZITKO & HALON, 1991; GREGORY, 1996)



NOWADAYS, MICROPLASTICS HAVE REPLACED NATURAL EXFOLIATING MATERIALS IN FACIAL CLEANSERS...



... RESULTING IN DAILY OR WEEKLY USAGE OF MICROPLASTIC-CONTAINING PRODUCTS BY CONSUMERS.



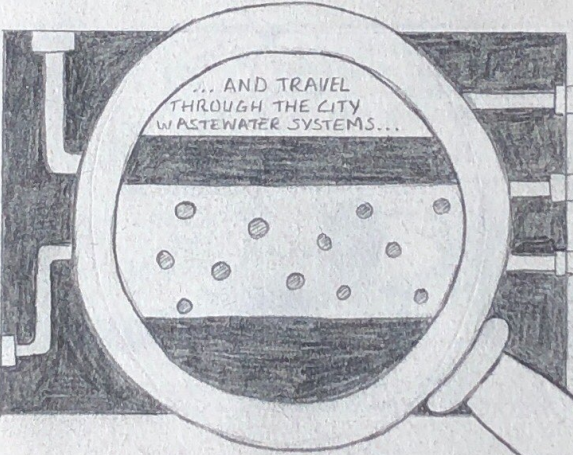
MICROPLASTIC IS NAMED "POLYETHYLENE", BUT IT ALSO GOES BY VARIOUS OTHER NAMES.



BUT HOW DO THESE MICROPLASTICS POLLUTE OUR OCEANS? LET US SHOW YOU!

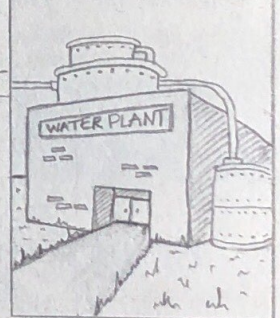


AFTER FACE-WASHING, THE MICROPLASTICS GO THROUGH THE DRAIN...

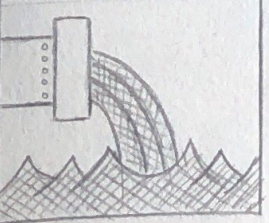


... AND TRAVEL THROUGH THE CITY WASTEWATER SYSTEMS...

... UNTIL THEY ARRIVE AT A WASTEWATER PLANT.



BECAUSE OF THEIR SMALL SIZE, MICROPLASTICS ARE LIKELY TO PASS THROUGH THE PLANTS (VESILIND, 2005) AND END UP IN THE OCEANS (BROWNE ET AL., 2007)



TO EXAMINE THE IMPACT OF THESE MICROPLASTICS ON THE MARINE ENVIRONMENT ...



... WE INVESTIGATED THE SIZE OF THE MICROPLASTICS IN FOUR BRANDS OF FACIAL CLEANSERS.

THE MICROPLASTICS WERE EXTRACTED BY ADDING 0.5 G OF EACH CLEANSER TO 25 ML HOT WATER IN A PLASTIC SYRINGE WITH A FILTER.



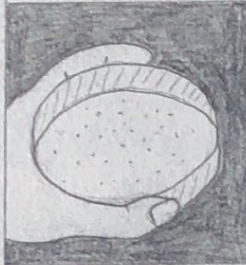
THE SYRINGES WERE SHAKEN REPEATEDLY FOR ONE MINUTE TO DISSOLVE THE CLEANSERS.



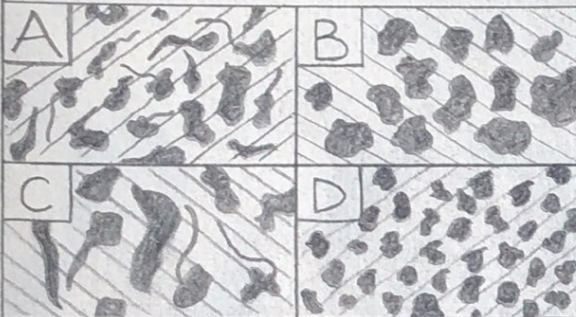
WE EMPTIED THE SYRINGES SLOWLY THROUGH THE FILTERS SO THE MICROPLASTICS REMAINED ON THE FILTERS...



... AND WERE THEN WASHED OFF INTO A SMALL PETRI DISH SO THEY COULD BE STUDIED.



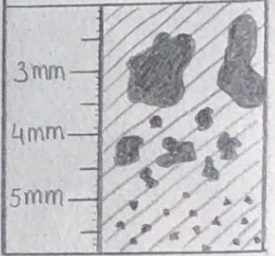
THE MICROPLASTICS WE FOUND IN THE FOUR FACIAL CLEANSERS ALL HAD VARIOUS IRREGULAR SHAPES.



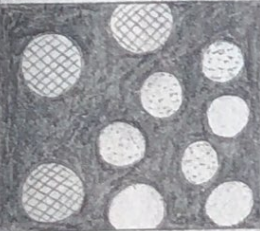
BESIDES THE VAST RANGE OF SHAPES, THE MICROPLASTICS ALSO SHOWED A GREAT VARIETY IN SIZE...



... AS ONLY SOME OF THEM WERE >1MM AND MOST OF THEM WERE <0.5 MM.



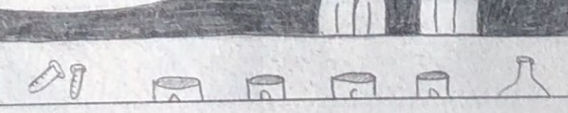
BESIDES MICROPLASTIC, ALL CLEANSERS HAD COLORED NON-PLASTIC MATERIALS IN THEM THAT BURST DURING WASHING.



THESE RESULTS SHOW THAT:

"THE AVERAGE CONSUMER IS DIRECTLY RELEASING MICROPLASTICS OF A SIZE SUITABLE FOR INGESTION BY MARINE ORGANISMS WITHOUT DEGRADATION".

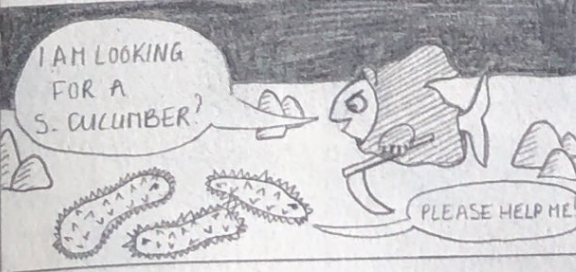
EVEN THOUGH WE DO NOT YET KNOW WHAT THE LONG-TERM IMPACTS OF MICROPLASTICS ARE ON MARINE ORGANISMS...



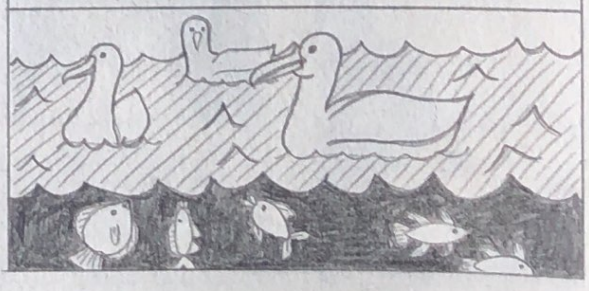
... WE DO KNOW THAT MICROPLASTICS ARE A DIRECT THREAT TO SMALL ANIMALS (THOMPSON, 2009; GRAHAM & THOMPSON, 2009).



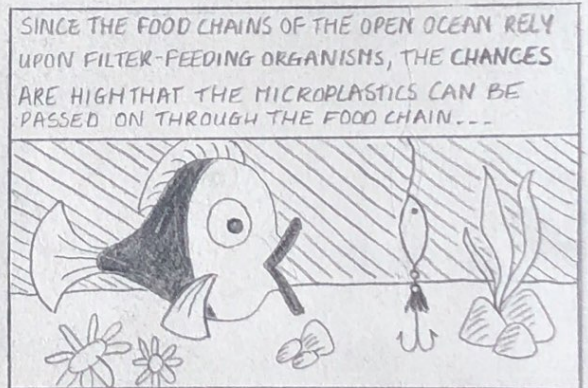
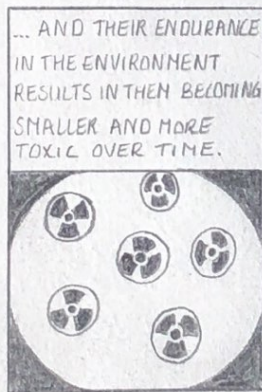
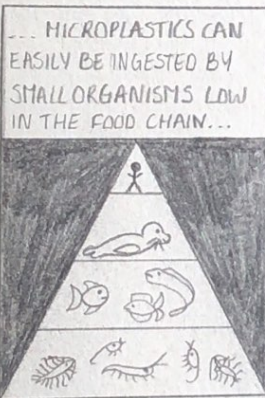
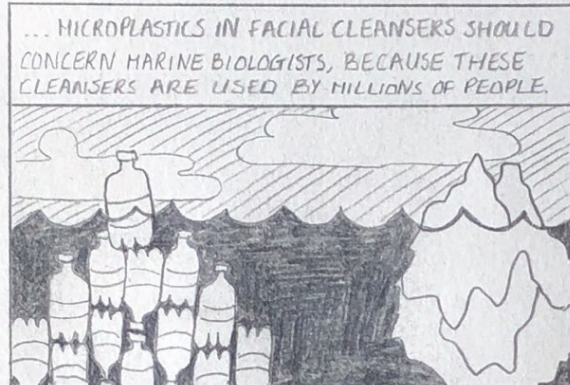
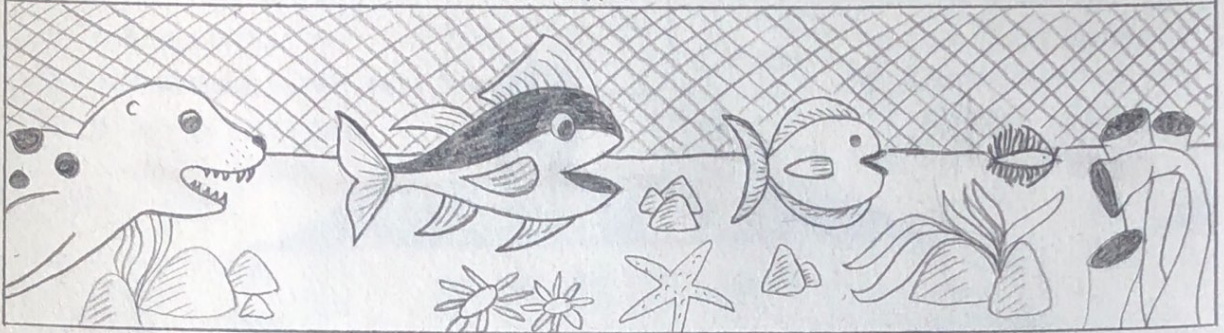
"SMALL ANIMALS CONSUMING MICROPLASTICS ARE AT PARTICULAR RISK FROM STARVATION, REDUCED FOOD CONSUMPTION DUE TO SATIATION, OR INTESTINAL BLOCKAGE LEADING TO DEATH (DERRAÏK, 2002)."



BESIDES, POLYETHYLENE FLOATS ON THE WATER SURFACE (ERIKSSON & BURTON, 2003), WHAT INCREASES THE LIKELIHOOD OF BEING INGESTED BY PLANKTONIC ORGANISMS, FISH, AND SEABIRDS FEEDING AT THE SURFACE.



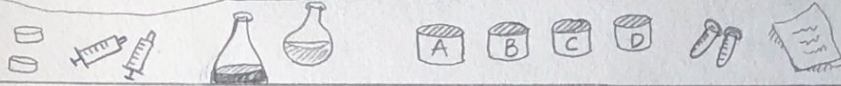
MICROPLASTICS THAT ARE INGESTED BY PLANKTONIC ORGANISMS COULD POSSIBLY BE PASSED ON TO ORGANISMS THAT ARE HIGHER IN THE FOOD CHAIN.



"WE BELIEVE THAT MICROPLASTICS
IN FACIAL CLEANSERS ARE
LARGELY UNNECESSARY, AND
MAY RESULT IN LONG-TERM
IMPACTS TO THE MARINE
ENVIRONMENT."



THEREFORE,
"WE ASK TO BE AWARE OF
THE POTENTIAL CONTRIBUTION
TO MICROPLASTICS POLLUTION
MADE WHEN WASHING
ONE'S FACE."



THANK YOU FOR YOUR TIME!