

Counting Equilibrium and Le Chatelier's Principle

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Introduction:

This cultural unit will explain how equilibrium can cause problems if not balanced.

Cultural Objective:

Students will learn one way that relates to the body and its internal organs and how to build a building.

Cultural Information: The PPT presentation will demonstrate if you get off balance in your systems it can cause you become off balanced and that something is wrong and if you are building a building or a home you need the right wood or it can have drastic results.

I know as a nurse that when your equilibrium goes out of control you get wobbly, and sometimes you can pass out. Your body is letting you know that something is wrong. I learned that in nurses training & yoga. I see this also in building projects, that it needs to be in balance with each other or it won't stand, it can become wobbly and out of control. So, if the dynamic is disturbed by changing the conditions, the position of equilibrium shifts to counteract the change to reestablish equilibrium, but in buildings it may just fall over.

I will share from what my ancestors, elders, parents, and grandparents taught me through my life and also my brothers who are builders of frame homes and me building a long house structure. I will demonstrate by explaining how to build a long house and what it takes to keep it from falling over.

A traditional longhouse was built by using a rectangular frame of saplings, each 2 to 3 inches (5 to 7.5 cm) in diameter. The larger end of each sapling was placed in a posthole in the ground, and a domed roof was created by tying together the sapling tops. The structure was then covered with bark panels or shingles.

This can be in the woodland's region or in the plains area. It was at spring time that the materials used for building these flexed homes were ready to use. Saplings of many varieties would bend freely, and tree bark of many species could be peeled off in large sheets.

No matter what season a flexed home was to be lived in, building such a style of home was accomplished more efficiently in the late spring to early summer months, when the sap flow signaled trees to put forth the year's new growth of leaves. It was this time of year that saplings used to build the framework of the home were pliable and easily cleaned of their bark.

The green poles used in flexed-wall frameworks were obtained from many varieties of trees. Those the Native Peoples used more often depended on cultural and individual preference, and availability. Willow (scrub/river willow) was said to be the only traditional variety used for dome wigwam construction, however the historical

record is very clear in asserting that many varieties were used across the Eastern Woodlands to the plain's areas.

Some Anishinaabe for example, were historically recorded in using tamarack poles while demonstrating dome-wigwam construction, also noted a special preference for ironwood; the reason given was because they could use smaller diameter poles which, when dried in place, had the strength of larger diameter poles of other varieties of trees.

Once harvested, the poles were stripped of their bark. Removing the bark prolonged the life of the poles by discouraging rot and bugs. During the late spring to early summer, many varieties of saplings could be easily peeled by hand (otherwise, they had to be scraped of their bark). The thick ends destined to be placed in the ground were then readied.

When you look at the inside of the lodge it also has to be balanced so if you need more poles to keep it in balance that would be a very important move.

Anishinaabe were also noted in favoring elm saplings for straight-sided bark homes, and spruce saplings for conical wigwams. Some traditional lodge builders today cite cedar as their tribe/Nation's traditional framework material, and often archaeologists cite oak and hickory as possible vertical house posts.

In constructing these wigwams, we have personally used poplar, hard maple, soft maple, sassafras, pine, aspen, beech, and locust saplings for the framework. Those are the trees in our area.

Indeed, only some species lasted longer in the ground, indicating the possibility that builders were more selective of vertical poles, using preferred varieties of trees possibly in contrast to horizontal poles on some level (an early 20th century Anishinaabe/Ojibwe wigwam was noted to use some poplar poles in its roof frame while tamarack was put in the ground). We know locust and cedar, although tough to bend, have an excellent lifespan in the ground.

Usual home maintenance is quite evident in the archaeological record. Knowing that, selecting vertical poles to construct a flexed-wall home probably depended on a delicate balance of three material factors: longevity, flexibility, and availability.

Harvesting saplings was usually the job of men. Men, being the main woodworkers of most Woodland societies, usually took charge of the cutting of poles for dome-wigwams and barrel-roofed/cigar-shaped longhouses where women participated more in or took charge of gathering poles for the framework, more or less depending on the culture. In general, poles needed to be very long with as little taper as possible. Such saplings could be found in deep forest (especially small valleys) as they grew straight and tall actively seeking sunlight blocked by the forest canopy. This is the example of all working together to get the longhouse completed. Everyone has a job to do to make sure that this lodge stays up for a long time.

Now that the longhouse is almost done, it is time to put the outside covers on, it can be birch bark, sheet of bark from variety of trees: inside large strips of cedar bark; outside long strips of elm, ash, poplar, and hickory. This is a balance of weight on both sides of the lodge so that it doesn't bend in either direction.

As we live our lives today we look for the balance in everything we have: traditionally we have men and woman in our ceremonies to represent the balance of life, our food, medicines, and raising our children. It's the balance that keeps us centered in our daily life.

Author biography:

Boozhoo, my name is Miigizi Ikwe, Wapski Makwa indoodem, Mikanock Wajii. My other name is Frances Allard, I'm from the Turtle Mountain Chippewa Reservation in Belcourt, ND. I am Anishinabe Ikwe (Ojibwa)/Cree/Mitchif and the eldest of 8 siblings. I have two sons, an adopted daughter, a foster daughter and an adopted grandson. I have seven grandchildren and one great-granddaughter. I raised two other young men as well; one lives here in Belcourt and the other lives in Colorado. My father was a marine, my mother was a beautician, and when I was a child, we traveled throughout the US/Guam/Japan before returning to the Turtle Mountain home of my parents in 1959 when I was 14 years old.

I have had a lot of educational experiences, both formal and informal. I graduated from Turtle Mountain Community High School in 1963; got an LPN degree in 1974 through the Lake Region Jr. College in Devil's Lake, ND and was trained in Belcourt; completed a BA in Communication/Dance in 1985 (Missoula, Mt) during the summers I worked as a woodland fire fighter; added an AA in Chemical Dependency in 1993 and an AA in Child Abuse/Neglect in 1994 from Lummi Community College (which later became Northwest Indian College) in Bellingham, WA; and then went back to TMCC for an AA in Commercial Art/Graphic Design in 2005; and picked up many certificates along the way. During those years, I was educated also by many Elders from different tribal nations and finally came home to Belcourt in 1995 and began my studies with all the Elders in the Turtle Mountains. I learned a lot and was honored to sit with them and learn from them. I also went to Canada to learn from the other half of my blood line, the Cree Nation. My travels took me across the US/Canada and across the ocean to Guam and Japan, learning many cultures along the way. The very first teachings I learned were the Seven Teachings of the Ojibwa, which came from my Aunt Edna Cloud who began this journey for me.

While I was in college, I learned to do research and found that very interesting. That training has become even more useful now that I am a board member of the Turtle Mountain Chippewa Tribal Nations Research Group, a board that reviews and approves all research done on the Turtle Mountain Chippewa Reservation. There are individuals from various universities who want to do research with our Turtle Mountain people, and the board makes sure they are following the guidelines of the Tribal Nations Research Group. We are the protectors of our people in the research/data arena.

I learned to sew in high school and loved it. This is one of my gifts that I have. I design all of my regalia (the traditional clothing/accessories) that I wear for Ceremonies/Pow Wows/special occasions. Since I have moved home, I have designed and made regalia for my grandchildren and other young people as well as others who request it of me.

I am a Cultural Advisor for TMCC and ND EPSCoR. I work with 6-12 graders in ND EPSCoR NATURE camps during the summer months and ND EPSCoR NATURE Sunday Academies during the school year. I write cultural supplements for each of the STEM topics covered in the various STEM activities. If I am not familiar with a

STEM topic, I do research on the topic so that I can figure out which cultural information fits best with it. This I have been doing for 22 years. I work for TMCC as an instructor, and was asked by the TMCC president and vice president many years ago to develop an archive for our artifacts by our people (clothing, tools, baskets, sculptures, etc.) for the college, which I did for 6 years. I am also currently working for the Turtle Mountain Chippewa Heritage Center for the last 3 years as an archivist/assistant for our artifacts and the tour guide to explain the historical way of life of our people here on the Turtle Mountain Chippewa Reservation. I also do research on various artifacts in our collection to find the importance/year/geographic origin of the items.

I realize that my passion is all about what I have learned and how to give back to our families, relatives, friends, and those who want to know who we are as Anishinabe people. I am grateful for the teachings of our elders, our young people of today and my children. I am also a sponsor for those who are struggling with alcohol/drugs on a one-on-one basis, as well in the sweat lodge. I work with the youth, adults, and the elders, outside this community in all four directions.

As I look at my journey throughout my life, my vision is to work with my people in any way I can to teach what I know, and pass it on to all that are interested in our Native way of life. I live simply so that I can live in peace and harmony in nature, which means I will follow the Seven Teachings in a good way. Those teachings came from my elders and I take the lessons they taught me seriously and to heart. So, my mission is to guide those who want the Seven Teachings in their life. The Seven Teachings are Love, Honesty, Humility, Bravery, Respect, Wisdom and Truth.