

MEDIA EDUCATION FOUNDATION

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Many Ways to See the World *A Thirty-Minute Tour of World Map Images*

Transcript

NARRATOR: This presentation on world map images may shock you and stretch your mind. It will certainly impact how you think about the world. You will learn how mapmakers wrestle the shape of the round earth to place it flat onto a sheet of paper. Most people are familiar with this world map, but as you will learn, there are many ways to view the world. You will hear stories about a number of unique maps and how they came to be created. Map publisher Bob Abramms, from ODT, will take you for a peek behind scenes into the minds of 12 mapmakers to explore the values, philosophy, worldview, and politics that led these mapmakers to represent the world in the way they did. This video has three powerful messages that are conveyed through an analysis of these maps. First, we can understand the world only if we are willing to see things from multiple perspectives. Second, reality must be seen from many vantage points. And thirdly, one person's voice can impact the planet. At the end of this program, you will recognize that maps do make a difference in how we see the world.

BOB ABRAMMS: The challenge of mapmakers is to find a way to take the shape of the globe and to transfer that onto a flat surface. And to think about this task, I want you to - how many people here have ever tried to peel an orange and to keep the peel in one piece? Raise your hand. I tried to do this earlier today with, in fact, some clementines, and I had some interesting results - all of which resulted in very ugly maps. No matter what you do, it's impossible to totally flatten it out, and that illustrates the point. You can't make a round globe into a totally flat surface. Is there a best way to peel an orange? Is one way better than another? They're just different. There are many ways you can peel an orange. You can peel it all around so it spirals around. You can sort of split it and peel each piece off or you can just sort of do it at random. But however you do it, there clearly isn't a best way to peel an orange.

The way that mapmakers do this is to imagine a light bulb in the middle of the globe and then shining through the surface of the globe and projecting, that is why they call them projections, projecting the surface of the land and the water onto points on that cylinder that surrounds the round globe. Now, this actually isn't how cartographers do it. It's done with mathematical formulas, but it is as if it were projected out like that, and then you can slice the cylinder anywhere you want and then unwrap it and presto, you have a flat map. So that particular projection is called a Cylindrical projection, and you've got the second type down is an Azimuthal, or projecting the globe onto a plane, good for a continent like Antarctica - represents it well. Or the third one is a Conical projection; good for just, again, a certain area. So these are three ways of translating the round globe onto a flat surface.

Is one better than another? They're just different. Let's look at four different kinds of map projections, and instead of the globe, let's try an experiment and project a human face. The first projection that you see there is a projection of a face on a Robinson projection, and then that face is translated to a Mercator projection, and then it's transfer to a Sinusoidal and then to a Mollweide. Is it the same face? Yeah... sort of - but it's different because different things are emphasized so each map projection gives you a different vantage point, a different frame of reference, a different way of seeing it. If you look at the Mercator, the chin is a little bit bigger and the forehead is bigger. And if you look at the Sinusoidal those things are contracted in. So it all depends upon what's important to you, what you're emphasizing, what your concerns are to determinate which projection you would pick.

I'm gonna introduce a projection that was invented by Gerardus Cramer. He's known in the trade as Mercator. This is a redrawing of his original map from 1569. It's a very interesting projection because one of the things that it does is it makes a statement on the face of the map and on the face of the map it says: "This is a new and enlarged description of the Earth with corrections for use in navigation." He was very specific about the purposes for which that map would be used. Now if Mercator were alive today, and he went down to the local map store, and he saw that someone it taken his projection, as Rand McNally did, and publish a full size modern map of the world he would said: "Oy vey! What is this? What are you doing? Dumbkoffs!" He was German. Actually he was Flemish. This would make no sense to him because he never intended this to be used as a world map. It is very common use as world map, and this is a very familiar image to us but it is an illogical use of that map projection. It was intend to be used as a way to create regional sea charts. The purpose of it was so that you could go from one point to another point in the Ocean, draw a straight line between those points follow that straight line, as a line of constant compass bearing, and you'd end up where you wanted to go. But it would completely confound Mercator to have his map projection in common usage as a world image.

Well another image that was developed in 1974 by historian Arno Peters is this Peters map. This was, of course, a map that was developed with one specific purpose in mind, which was to create a map that was fair to all people. Peters was doing a history of the world, and he was concerned that the Mercator projection didn't allow him to portray the world civilizations over the last 5,000 years because it emphasized the European centered or Northern Hemisphere centered civilizations. The Mercator projection compresses the region around the tropics. Most Mercator maps today crop the bottom of the map, removing Antarctica resulting in the northern half of the earth taking up to thirds of the map area. The south then becomes diminished in size and importance when compared to the north. And so Peters set out to create a map that showed the countries in true size and true proportion. And this is his map. It's kind of funny because you've got severe elongation between 45 degrees north and 45 degrees south, and you've got severe compression between 45 degrees north and the North Pole and between 45 degrees south and the South Pole. So every map, to show something true, also has to lie. Every map that wants to show something accurately has got to sacrifice another area because in order to portray this round surface - let's said we were to take an Exacto knife an cut this all up and try to lie it down on the floor. Just the same problem as the orange, or the clementine, is that it becomes impossible to do that unless we're sacrifice in something. If you wanna show lines of constant compass bearing like on a Mercator, you can't have sizes. If you wanna show sizes, you lose shape. If you wanna

have it be distance accurate, which will be another map that will see next, then you're gonna lose both size and shape. Lets look into the next map.

The next map was developed by Leonard Guelke in 1979. He was a professor of the University of Waterloo. This is a Toronto centered map of the world. It tells you exactly, in real world miles, or kilometers, how far you are from Toronto - any place on the earth. It is a very practical map for one thing only: it actually has sizes and shapes somewhat accurate say towards the center within North America, but the further you get from Toronto the further it does what? It distorts both sizes and shape. In fact, the real acid test of this is: what if you were to take a scissors and cut out Australia on this map, pass to somebody and say: "What continent is this?" They would have no clue. It would be baffling, but it's a very good map. It's not meant to deceive, but it shows only one thing accurately. The next image that I'm gonna talk about is an image of the earth that has had a profound impact on human consciousness. This map, this image, is the shot from the Apollo 17 mission in 1972. This is an image that dramatically transformed not just the consciousness of the astronauts who saw it themselves, but when it was beamed back to earth, I would assert that this had a powerful impact on how we see ourselves as a human species, that we got to see this amazing, beautiful, gorgeous planet. There weren't boundary lines separating countries. That we got to think about the interrelationship of the planet's health, the beginning of Gaia consciousness, thinking of the earth as a living organism. And this had a dramatic effect on how we considered our relationship to the planet and ecology. Some time after the Apollo 17 flight there was a wild eyed hippie from Berkley, California, his name was Paul Hoffman, and he was fired from his computer job, he was living out of his car, and he had a dream one night while he was parked in a friend's garage. A dream one night about this image, and as result of that dream, he dreamed of himself putting stickers of the Earth on postcards and sending them to his old college alumni. And he didn't have any idea where this dream came from, but he managed to pursue it relentlessly. He also had a vision of sending these out all over the world. He has produced over 15 million of these stickers. But they're just one example of how someone's concept of sharing their vision of the world and what's important and how we see ourselves can really make an impact in a really material way.

The next image was also created by another kind of a visionary, a wild-eyed visionary, and his name was Buckminster Fuller. Buckminster Fuller developed this dymaxion map, stands for dynamic maximum tension. And this dymaxion map was developed in 1927. It languished in obscurity, no one paid it, any attention, until some editor at Life magazine in 1943 thought: "Oh, let's do a cool cut-out on this" and once it appeared as a cutout in Life it became very, very popular to fold the dymaxion and the 20-sided solid figure that you get is an icosahedron. Now, the question I would ask you is: which way is North? North is in many directions on the dymaxion, not just converging on the North Pole. North isn't the same as up. We are so often used to say that north is being up that when we see something like the Fuller it throws us because our orientation is then off. Well another map that questions our assumptions about North was actually a map that I enjoy telling school teachers about especially. This was a map that was first drawn by a 12 old boy from Australia. His name was Stuart McArthur. Stuart drew an early version of this map when he was in 6th grade and passed it in to his teacher, and the teacher said: "Stuart, redo this right or you're not gonna pass." And he didn't understand why it was that he couldn't have Australia on the top of the map. Well, a few years later, he was 15 years old, and he was an exchange student in Japan, and when he got to Japan, he was ridiculed mercilessly by

his fellow exchange students from the USA. They taunted him for coming from the bottom of the earth. And in that time when he was 15, he resolved that one day he was going to publish a map of the world with Australia on top. So fast forward 6 years, he is 21 and is graduating from the University of Melbourne; this is Australia day in 1979. He published this map that you are looking at and since that time it's sold 350,000 copies. Not bad for a kid who was told to do things a different way. An abbreviated version of the caption on that says as follows: "at last, the first move has been made, the first step in the long overdue crusade to elevate our glorious but neglected nation from the gloomy depths of anonymity in the world power struggle to its rightful position towering over its northern neighbors reigning splendidly at the helm of the universe. No longer will the South wallow in a pit of insignificance, carrying the North on its shoulders for little or no recognition for her efforts. Finally, South emerges on top. South is superior. South dominates! Long live Australia—Ruler of the universe!" Here is another map that brazenly states that North is not the same as up. It takes another familiar map projection, the van der Grinten, reverses the poles and gives that, somewhat unique, South up point of view. This is what we published as the "What's Up South" world map. It is a modern, up to date, political map that is shown on a van der Grinten projection. That's a projection that was in very, very common use. It was, in fact, the official projection of the National Geographic Society from 1922 to 1988 - for 66 years. This was probably the second most popular projection next to the Mercator, of all the other images we're used to thinking about seeing the world in. But what we've done is we flip it up side down, and it looks like it's an all-different situation. That's the van der Grinten projection.

Let's look at our next image of the world; this is also a beautiful, beautiful image. This is a Satellite-composited photograph developed by Tom Van Sant. It's called the Geosphere project. It was produced in 1990. The projection used to assemble this collage is the work of Arthur Robinson, perhaps the most famous cartographer of the 20th Century. Tom Van Sant's Geosphere map, using Arthur Robinson's projection, was assembled from thousands of satellite photographs. The satellite was about 530 miles above the earth, and these individual satellite pictures have then been squeezed and stretched to fit into a Robinson projection.

The way this map was developed was again one of this stories of Tom Van Sant came down with an eye disease that threatened him with blindness, and he had to put antibiotics into his eyes every 30 minutes for 10 days. And in order to deal with this, rather than fighting off sleep, he went into a state of deep meditation, and at the end of 10 days he came out of this with his overpowering sense of needing to produce an image of the world the shot from space, and it took him a year to do it, and that's the result. It's a collage.

The next one that I wanna show you is a very interesting picture. Here is the Earth, according to population size. This cartogram was created by cartographer, Paul Breding. This is a map that gives up territory to tell you how many people are in each country. So each tiny square on this map is a million people. And do you see Greenland on this map? No, there's not a million people in Greenland, so it's gone! Ok? You don't get to show up. A million people is the minimum threshold. You've got it or you don't? Compare them both. Now, the Peter's map is said to be fair to all people. But which map is fair to all people? Well, they're fair to all people in different ways. Or you can say the Peters map is fair to all acres, whereas the cartogram is fair to all people. Fair to all people? What about the Palestinians? What about the Tamil rebels? I mean,

there are a lot of people that are not represented because we conceive of nation-states as the only thing that merits tracking population size on. But there are people, as we know, who don't have their own nation-state.

This next map is attributed to Leonardo da Vinci, whether it was his own work, or simply created under his supervision, is a matter for the historians to wrestle with, but it's clearly a beautiful map. It's one of the first maps that ever had the name America on it, and it's one of the first maps that ever had a South Polar continental region mapped out on it. So it's a very interesting view of the world that is, again, just one more different way to see things. Our new Hobo-Dyer projection map is here to my side, was published last August, and it was just used when Jimmy Carter received the Nobel Prize. He came to us because he liked the map, and it made sense that he had a map that displayed, again, the equatorial countries true to size and true to proportion in a way that was able to display the dots. If you had put these same dots on a Mercator map, what would have happened? They all would have been scrunched up towards the bottom of the map. So this was a perfect application for this kind of a map. This map was created by British cartographer, Mick Dyer. How is this image, with south on top, different from either the Macarthur map or the "What's Up South?" map? Well, like the Peters, it has the somewhat unique attribute of being an equal area map. All of the countries are true to size and true to proportion. But unlike the Peters, it doesn't have that stretched out effect between 45 degrees north and 45 degrees south. It has better shape in the mid-latitudes but worse compression when you get to the Poles. Everything is a trade off. And the Hobo-Dyer map, with its many perspectives, reinforces the point that there are many different ways to see the world. We can't simply look at things from one vantage point and feel like we understand the picture completely. And all we've done is change the orientation of the poles and change the centering, and when you look at these two side by side, it looks like it's a different planet. It looks utterly different. I ask you: "How much water is on the image to the right?" And you'd say: "Oh. I don't know, 50% or something like that." And you'd ask the same question here: "How much water is in this image here?" "Oh, 68-70%." Well, that's really what there is on the earth and it's the exact same amount there. It's just that your attention is focused on different things. And so, what you put on the center of a map, how you frame things, how you orient things, communicates a very important message.

I am going to close this presentation by telling you a short story. We, as you may know, are the publisher and distributor of the Peters map for North America, and as a map publisher, you often get a lot of flack from people. And in this case, I got an email that - I'll just sort of summarize it for you. It came in last July. I said: "Hi, I recently purchased a Peters Projection map and was shocked to find that you show Tibet as part of China. It seems that for a map whose political agenda is fairness to all people, this lack of attention to Tibet seems like a glaring oversight." When I heard this concern from Martin Luz in New York, I knew it was a sincere and impassioned request, but I also know that when issues come up like this, I defer to the official Peters map cartographers in Oxford, England. So I forwarded the email on to Oxford's chief cartographer, Terry Hardaker, in the UK. Here is Terry's reply to Martin: "The Tibet question is a tricky one, but we have no alternative but to follow a consistent policy on all disputed territories. Which is to show the situation as recognized by the UN or in certain circumstances, the defacto situation. To date, the UN has not recognized Tibet as an independent nation. We cannot get into the rights and wrongs of any territorial claim, otherwise we would be seen as

partisan. You may not know that there are approaching 200 territorial disputes worldwide. Just because they do not all get media publicity does not mean they are less significant to the people who are pursuing the claim.”

So this was Terry’s response to the person who was complaining, and I thought it was a perfectly good response. To me, I’m out of my league here, so I just felt fine about that and I didn’t expect we’d hear from the original, the person who sent this was Martin Luz, from New York. So anyhow, three or four weeks goes by, and Martin then sends a very long, two page, this is his final parting shot, a letter directly to Terry. And it says: “Dear Terry, I’ve been giving your thoughts on Tibet quite a lot of thought and I’d like to reply.” And I’m just summarizing this. “The validity of the Chinese occupation of Tibet, until then a Sovereign nation, comes only from the refusal of the international community to do anything about it. And given the claims of the Peters projection to objectivity and respectful fair play, it is especially disappointing to have this dispute swept under the rug. The repudiation of white, western, colonial imperialism may be objective, but it is very old hat. I guess what I am trying to say is that it’s all fine and good to be iconoclastic when it costs you nothing, but in the end, it’s a sad commentary which undermines your message that your objectivity and your idealism only extend as far as your pocketbook.”

Well, you know, it’s one of these things where I thought this was done and handled and I didn’t need to say anything else about that. The end of the story is, four weeks after that Terry Hardaker and I are revising the Peters map, and we made about 30 changes because there are boundaries that have changed and there are capitols that have changed their name. There are a lot of things that have to be updated cartographically every time you redo a map. And Terry and I are working through the night on this. It gets to be about 8 in the morning, and he says to me while we’re on the phone, he says: “By the way, Bob, I just happened to come across this old base file we did for Oxfam, the world relief agency, and in this base file I do have a border of Tibet. Would you want me to put it in there?” And my jaw dropped and I said: “Terry, you want me to make the call whether Tibet has the border on it or not?” And he said, “Yeah, we have it, we can put it, you know.” And this is the same guy who just wrote this other email. So I am thinking to myself... and all of a sudden I am starting to feel really omnipotent here. And so, I’m just dumbstruck and Terry says: “Bob, are you there?” “Yeah, I’m here.” And he says: “Well, do you want Tibet in?” And I said: “Yeah, Well Terry I just want to enjoy the power here for a minute. I want to have that feeling that I get to be the one that says whether Tibet has a border or not.” He says, “Do you want it?” And I said, “Yeah I want it.”

The point that this example illustrates is that one person made a huge difference - that Peters maps, that we’re now selling, have the Tibet border on them because one person made a point of not just complaining once, or not just criticizing us, but of staying on it. I guess I use this as an example to say, your voice counts. We’re in a place in this country’s history where people feel like their voices don’t count, and it’s not just going into the voting booth. It’s talking to your neighbors and talking to your friends, and that’s the great thing about this country: is that we can express ourselves freely, whatever your politics are, whatever your position is. Don’t sit on your opinion. Share that opinion and make a difference. Thank You.

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