

What's Inside Here?

Some Thoughts about Children and the Inner Nature of Wood

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At the after-school activity house at our school, it often happens that children disappear and we find them in the woodwork room. You can almost predict what they are busy with: they are hollowing out slabs of wood. If you ask what it is going to be the answer comes quickly—“Bowl.” With bowl adzes and chisels they dig and hollow out all kinds of wood bits and pieces from the scrapbin.

What is it with this digging and downward- and inward-moving activity that is so exciting and captivating? What makes the need to creep into old hollow trees irresistible for so many?



Prologue: From the Inside Out

In the sixth grade, the second year with woodwork according to the school schedule, the students at our school work with one piece as the raw material. Ideally they would truly start from scratch, cutting down the tree with the bark still on the trunk. We work with simple, resting forms. Out come mallets, little crochet hooks, and butter knives. The convex rounded form is the common denominator, and the little darning egg is the archetypal-task in the realm of convexity.

When I was a schoolboy I struggled terribly with these two principles in physics. At last I managed, at least in certain moments, with the help of the classic example of glasses that are pictured in profile, to connect the concept of convex with growth. It was something positive—something got thicker. Sympathy! The concave was in a following fashion associated with less dignified expressions. It was something receding,



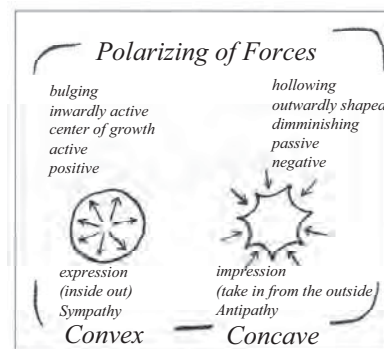
something that got smaller, something negative and even antipathetic. We can experience something active in connection with the convex, and something more passive with the concave surface.

The paradox in woodworking is that the activity leaves an impression. We dig and cut something away to leave behind the more essential, in other words, to become more visible. With clay and beeswax we have more freedom in terms of forming and shaping, alternating with taking away (minus) or adding new substance (plus). This plastic activity is in many ways less committed, perhaps more frivolous, than woodworking, wherein we cut in with great consequence and take something away. The material is continually getting smaller, so the activity is, in essence, a concave activity. The result stands forth as an outer impression which on the observer makes an impression.

Forms can be looked upon as results of impressions and movements from either outside or from within the form itself. They can be more or less static, frozen movements like a waterfall that has turned into a pillar of ice in the winter. Architecture is often referred to as frozen music. The first schoolwork for the seven-year-old is to practice drawing the straight and the curved line

on the blackboard. When the students later stand in front of new possibilities and form expressions, it is often fruitful to bring forth this strong common experience. A curved line shows itself as having the possibility to invert, for it has both concave and convex possibilities. Therefore the straight line becomes the golden middle road. But in many other connections it is quite anonymous in that regard.

What is the difference between the form of the round ball and the egg? The round ball



has, like the circle, a static peacefulness in its closed harmonious balance between forces working in both from the outside and from the inside. The egg is a round sphere that wants something! Convexity in a certain direction! In the same way as something that is filled with an inner force from the inside—the pregnant stomach, the little bud, the dough, the grape, the cheek of a child—yes, everything that is growing. The convex is in itself outwardly expanding. Convexity is a form that has excess forces within itself. This corresponds with the ideal healthy childhood nature the way we would like to see it expressed before puberty. It is seething, growing, and blossoming. Interest is overwhelmingly directed outward in the sense that activity expands and continues in the shape of strong fantasy forces. The sense of reality is much more expanded than for most adults. It is a living, pulsating state in which everything is possible.

The Inner Room: Impressions Finally Bowl!

From the clay we fashion the vase, but the most essential part is the empty space within.

— Laotse

In the seventh grade we turn everything inside out. The students are at the threshold of puberty, a time to start the task of shaping their own sense of self, their own inner space for thoughts and feelings, a space which will be the object for introversion, critical and self-reflective studies. Much of their interest is now turned inward. Now the time is ripe to dig and hollow out!



Woodworking also calls for the tools with which to learn. In North America one calls the grotto “cave,” a gigantic concave space. The German *schalle* means not only “bowl” but also “shell,” also something that encloses something that is on the outside to protect something on the inside. The more flat or shallow the bowl becomes, the more it will lean towards a tray, and the totally flat form is the cutting board. The concave is the more reserved form until it becomes self-effacing and ends up as a straight line.

First the student practices by hollowing out a little bowl which, after a while, shows itself to become a wonderful container for the egg that they made the year before, like a little nest! Often it becomes more beautiful if the inside of the little

bowl is polished with sandpaper until it becomes really smooth, whereas the edges and the outer side have a more rough texture with the imprints from the knife, chisel, or ax. What is important is that the students experience some choices about the surface texture of the bowl.

Around the time of the autumn vacation we are heading out into the forest outside the school gardens. There we have full-size logs which are waiting, preferably linden, brown ash, butternut, or black willow. The wood needs to be fairly soft if we are to have the strength to work with it during the winter.

No Risk, No Fun!

With newly-sharpened axes of different sizes, the students start their yearly project in woodworking. With the traditional ax one works away from oneself, but with the bowlmaker's adze one works toward oneself. One has to stand with a broad stance. Imagine that with these kinds of adzes huge tree trunks once upon a time were hollowed out to create boats! The sturdy ones in the class get a dreamy look in their large shining eyes when they think about the challenges ahead. This tool is hungry, and it really does a great job with little pieces of wood just flying off in big bites.

If one does it wrong, there are drastic consequences. This the teacher does not even need to mention. To set boundaries is easy—you will have an immediate corrective report back from life if the students do not pay attention. In this exercise, the teacher does not have to say too much but let nature be the ideal pedagogue. Nature has its own boundaries that the students will come up against. It is these boundaries and rules of nature we are searching for through the repetitive motion of the activity and the rhythm and experience; a sense for the material from nature's silent presence will start to be felt in the student, a kind of knowledge that has to be gathered as a capacity before it can be objectified into science. This the student cannot read about and know beforehand. It has to be experienced and speak its own language. On and off the teacher will stop up and ask those good questions, bring the sense of wonder in and bring the knowledge of the hands up into the awareness of the head to make it into science.





The rough work happens quickly and many of the children get a sense of intoxication with the quick progress of the work. But this asks for a sharpened sense of awareness, concentration, and therefore a stronger sense of presence, just as with whittling towards oneself. Are not these the capacities that we want to foster and strengthen through all pedagogical activities? Then the school will need areas where students through supervised activity can have the capacity to express themselves physically so that they can come to awareness of themselves. (These areas have disappeared in many homes.) This is what happens: students will meet a situation to the degree that they will sharpen their sense of presence and therefore have an experience of themselves. The opposite situation is the shallow reality of the electronic experience wherein the students are floating out far and away from the physical reality and return to the world as masters of just the

head. Through this kind of activity we will have intellectual children who have a lot of information and who can express themselves with great conviction but who are helpless when placed in front of practical challenges. When it comes to the meeting of the physical reality, the gap between information and true knowledge becomes painfully large for many. Anyway, we hear a lot this ongoing mantra that the students bring from home: you should not whittle towards yourself. For me this is like saying, “It’s wonderful to go skiing, but do not go down any downhill slopes—you can fall down and hurt yourself!” So what is childhood without Band-Aids and some scraped-up knees?

Much of this comes perhaps from the fact that many adults themselves do not feel so at home in the physical world and therefore have much anxiety in terms of trusting their children’s capacities. Instead of meeting the challenges, we pass on a sense of alienation and anxiety to the next generation. Will this mean that in the near future some day trips consist of traveling to folk museums in order to experience manual tools, and are we looking at a future in which the knife and the ax are just collection objects and not everyday use objects?

Anyway, back to the scene in the forest. Woodchips are flying, and I stand there and feel sad for many of the parents who do not get to see the fantastic things that the children are doing. (But I am also quietly glad that some of the parents are happily unaware of what’s going on!)

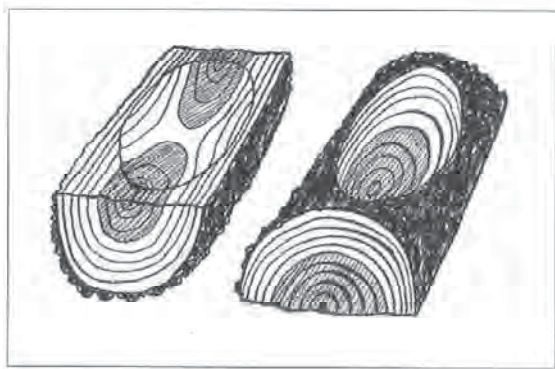
This Way? No, That Way: To Work with Two Sides of the Same Question

A central question here, as with all woodworking, is the direction of the cut. To form the convex surfaces, the cutting starts from a topographical high point

on the object, the center, and is directed outwards towards the sides, to come downhill with the tool and work out towards the periphery. This is, for instance, with the outside of the bowl. The student turns the bowl upside-down and cuts from the bottom towards the edge. When it comes to the inside, this situation is the opposite. Here we cut from the periphery, in and down towards the center, towards the bottom of the bowl. These fundamental principles correspond to the child and adolescent nature in terms of the base orientation towards life.

The young child has a sense of being in the center with an interest and orientation directed outwards towards the periphery, whereas the older youth experiences himself standing outside and orienting himself toward the inner space, toward his own center. The youth is fascinated by the periphery, which, with the help of the teacher, has to be brought close and connected with something that is known. The child, on the other hand, is constantly able to be captured by what is near and known, which still seems to contain unknown and wonderful aspects without bottom! Until puberty comes sneaking along and new pedagogical methods have to take place. What is important is to find the right material for the right time and to communicate through the right methods. Sometimes it is enough to just mention an exotic word and middle school youths seem to sharpen their ears.

Some will choose an open, receiving form like the tray or the larger bowl. The bowl is deeper, but not as deep as the cup or the goblet. If it becomes large enough lengthwise, the form will be a large wooden tray. There are many good reasons to start the hollowing process from the rounded side of the bark and to dig oneself inward towards the heartwood. This creates a concentric vein pattern



inside, like circles in water after a stone is thrown. Through the eyes of most people these patterns seem harmonious and beautiful compared to the more chaotic pattern that you get when you start hollowing from the inside out. The other advantage is at the outer edge of the bowl, at

the meeting point between the inner and outer forms. The rounded form of the trunk gives a natural play of lines between the two like the profile of a boat. Even when the students take the bark off with a good knife, nature provides them with a given form. All other starting points for hollowing out the bowl require that one has to finish off the top of the bowl oneself. This is a demanding

task for most young and inexperienced woodworkers, and the result can be for many a kind of less alive form. Nature is as a rule a more superior giver of form until one has truly mastered the art.

Another advantage by hollowing from the outside in also has to do with the strength properties in the wood. Generally the strength increases towards the outer wood and further up on the trunk where the bowl is most vulnerable to cracks. Many an old baking trough which has been hollowed from the inside out has cracked over time. The inner tension is the strongest here.

The work with this shell, the bowl, is much about learning to control the inside and outside forms at the same time. To manage to get uniform thickness is the starting point. Especially when the piece of wood is raw, it is possible to measure this, but our fingertips should also practice a sense for thickness. If we are not concentrating and not paying attention, if our thoughts are away from the work, we can suddenly cut a hole in the bowl. In order to check out and be forewarned about the thickness of the wood, the student can hold the piece of wood up against the sun or strong source of light and see where the light shines through. And if the student has a disaster happen, it is always possible to cut all the way through, make a clear circle and, then plug it with another piece of wood. With a little stain for color the student can camouflage where the mistake was made.



The Double-Bent Surface

You will discover that when we bend a surface, and then bend it again so that the bent surface again is bent, you have the most simple expression for inner life. We feel then how we can start to have form speak to us.

— Rudolf Steiner

Before we leave the question and the theme of the bowl, we should mention the phenomenon of the bottom—what is it? The bottom or foundation creates the transition between what is underneath, such as the table, and the actual hollow form itself. It can be tall and stately or totally absent so the bowl is rocking back

and forth on the table. It is important for the students to experience the different possibilities here. The bowl can move the direction of a goblet and have a tall and stately shape, or it can move towards a more open bowl. The teacher can have interesting discussions about this with the students. What is the purpose? Who are they planning to give the bowl to? Where is it going to stand? What is the intended use? This widens the perspective and gives their work a sense of meaningful connection.

Many Possibilities, Many Parts

One can also cut a small cylinder form and start hollowing from the cut surface, the end piece of the wood. In this way one will end up with a concentric vein pattern inside and totally even walls. And if one has cut precisely one can follow a single vein of wood. This is theoretically easy, but in actuality immensely challenging. Growths on trees have a chaotic, swimming vein pattern, which makes the wood extremely strong and very useful, for instance, for knife shafts. Straight and even walls are the end result, especially when one thinks of the process of drying when the students actually work in wet medium. A fresh tree trunk is softer and more malleable and is recommended for all hollowing out tasks. After cutting it must be placed in a cool and dry storage place until the piece of work can reach room temperature. One possibility is that the butt ends of the wood is sealed with tree glue or painted with liquid paraffin in order to avoid cracking while the piece is being worked. Hollowing out from the end wood can seem to be a little bit tough for most twelve-year-olds, but can perhaps be offered as an additional challenge for the ones who finish early. Drill a little hole on each side of the top, fill it with glue and put in a leather strap as a handle, and one will have a little bucket for a young child which can be used for berry picking. Drill all the way through and fit here a wedged piece as a bottom and one has a little box.



For the upper grades, especially middle school, it is tempting to cut a beautiful piece of wood in two and shape the parts as bottom and top. The inside could be hollowed into separate compartments for particular objects, for instance as a jewelry box. If this is done well and the student can follow the vein pattern, the box can be a beautiful esthetic piece. We use the same process in the ninth grade when we make a sheath for the knife. The parts are hollowed out so they will cover the knife exactly, and then are fashioned together with leather and

sewn, working from the whole to the parts towards a new whole, in other words, from analysis to synthesis.

Middle school concludes in the tenth grade with a focus on joining with a larger piece of work. This is a time when the young peoples' own inner space is closed for reconstruction. In the woodworking class they now have to build this with materials that they pick out themselves. They have to design dimensions, select the wood, and also decide for what this square construction is going to be used, often ending up as some form of container or cupboard.



Regardless of how carefully they prepare the technical drawings—from the front, from the side, and with little models, with an acceptable margin of error—this is a trial for most students. Patience and careful precision are required. Only sharpened pencils are acceptable! The payoff is deep, happy sense of contentment when in the end the parts actually fit. Then the students smile from ear to ear. They have built up their own inner room out of a jointed flat board! And it holds itself together through the strenght of the fitted joints. A high point happens when the student and the teacher each take a hold of an end piece of the box and pull in opposite directions and the box holds together without glue.



A healthy relationship to cause and effect is a central theme in all pedagogy during high school. I cannot think of a more specific task than this where one in a most immediate way can experience and practice the relationship between cause and effect because the students themselves have set the conditions.

We could say that during the elementary school years, the woodworking has to do with exploring and analyzing which culminate in the hollowing out of the bowl. During middle school the emphasis has to do with joining and creating of different spaces, and is marked by the experience of synthesis. The students at the high school level develop a sense of form and utilize both artistic principles. During artistic, playful activity during the elementary school years, and careful training of skills and technical capacities during the middle school years, we have built a foundation for independent, artistic, scientific work for the high school years.