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Counting the Stars: The Study of Creativity on a Human Scale, or How a Bunch of Cajun and German Farmers and Fabricators in Louisiana Invented a Traditional Amphibious Boat

John Laudun

The study of creativity is a vast enterprise. Within it, there must be a place for individuals whose eminence is bounded by locale, either by preference or by providence. Such individuals give us a glimpse of the nature of the creative act in a very immediate and intimate fashion. That is, within a definable horizon the creative act reveals the competence of the individual in the very moment of performance. Folklorists have long studied creativity, even if we were sometimes discerning its shape by its shadow, alongside other humanists, but in the last few decades we have been joined by an increasing number of scientists who, whether interested in the mechanics of the brain or in the way markets respond to novelty, work under the collective umbrella of creativity studies. A few initial forays into embedded, or contextual, studies of creativity—labeled case studies—within the larger field have been assayed, but it is early in their development, and I believe folklore studies stands to make a ready contribution to their efforts, offering as we can our decades-long refinement of the ethnographic study of creative moments.[1]

The trick, of course, is to study human beings as they are, always caught between being "free and stuck in the world" as Henry Glassie once observed (1982:15). Absolute freedom is where the humanities have tended to focus their attention, on artists who, alone in their studios or garrets, are able to explore the furthest reaches of what it is possible to imagine and then realize it in some fashion without concern for audiences or markets. At the other end of the spectrum, are those we imagine who are so stuck within the confines of everyday existence that they cannot see anything else, let alone accept any novelty, whether it be intentional or random. Glassie's ethnographic study of an Irish community revealed that there was plenty of middle ground, that there are folks within a community who stand out more than others, while remaining firmly a part of the dense web of community relations and ideas. Glassie came to adopt the local term for such individuals, stars. He notes: "The star stands at the center. Any consideration of a work of art, a story or song, in Ballymenone leads you to an exceptional individual. . . . The District's culture is not something apart from the particular individuals who are the force of its coherence, the reason for its existence" (1982:681). For Glassie, the older Irish men telling stories about saints in the past, who journeyed across the same landscape as men in a present filled with bombs and bullets, revealed how it is people get along in a world filled with others who may or may not be to their liking.[2]

Passing the Time in Ballymenone is filled with thousands of performances, some verbal and some material, all conscious manifestations of seemingly simple country folk living their lives year by year. What Glassie found amongst the poor farmers of Ballymenone was a constellation of stars, and it was this dense network of people and ideas that beckoned me when I began my own study of creativity on a quite different landscape, one filled with water and thus requiring a special machine to traverse it. I knew, too, that I wanted to address directly the antipodal anchors of creativity studies, the starry-eyed dreamer or the bloody-eyed laborer, and so I found myself drawn to an extraordinary artifact whose very realization screamed creativity and yet whose natal scene was grimy, noisy, and as modern as one could imagine it.[3]

The machine in question is known as a crawfish boat, a modern-looking thing with its metal hull and drive unit, hydraulic hoses and rams, and small-bore engine. Despite its rather homely appearance, it has a hidden virtue: it can go on land and water.

The crawfish boat is indigenous to the landscape it works, handmade in the area in a variety of shops and sheds on the Louisiana prairies. Some of the machine shops specialize in fabrication, some in agricultural equipment repair, some in welding, and some are simply the equipment sheds of farmers. The brief history of the crawfish boat that follows reveals that an

A crawfish boat, parked next to a rice field, has its front wheels all but hidden from view

An irrigation riser floods a field that has had its levees pulled up for rice cultivation extraordinary imagination did not exist within one individual but existed across a network of individuals. Just as importantly, the network had, and has, no central node, and thus it is harder to argue that any node is more, or less important, than any other. Rather, each individual contributes some piece to the larger puzzle until, just like a constellation, enough pieces fall into place that we glimpse a larger structure.

The individuals involved have names that, in fact, locate them on the landscape: Tedmon Habetz, Harold Benoit, Gerard Olinger, Greg Frugé, Clayton Courville, Mike Richard, Kurt Venable, Henry Cormier, Jimmy Abshire, Dale Hughes, and Michael Quirk. Habetz and Olinger are names long associated with areas settled by Germans in the late nineteenth century. Many of the other names are obviously drawn from the region's most renowned group, the Cajuns.

How their ethnic heritage affects their individual perspectives is for another time. To understand the minds of these makers, we must first understand the landscape on which they work, followed by an examination of one particular set of mechanics, hydraulics, with which they approach problems. With the landscape and machines before us, we are prepared to glimpse the birth of the crawfish boat as it slowly develops into its current shape. That development is a function of men operating in loose networks of both discursive and material exchange that overlap and change shape over the course of the boat's thirty-year history. Our understanding will be based on a close examination of the thing itself, and from that, we may be able to glimpse how the minds of these men work. Of course, they understand themselves simply to be solving obvious problems posed to them by the constraints that we all face: the place in which they live and the time in which they live. We begin with their place.

Landscape

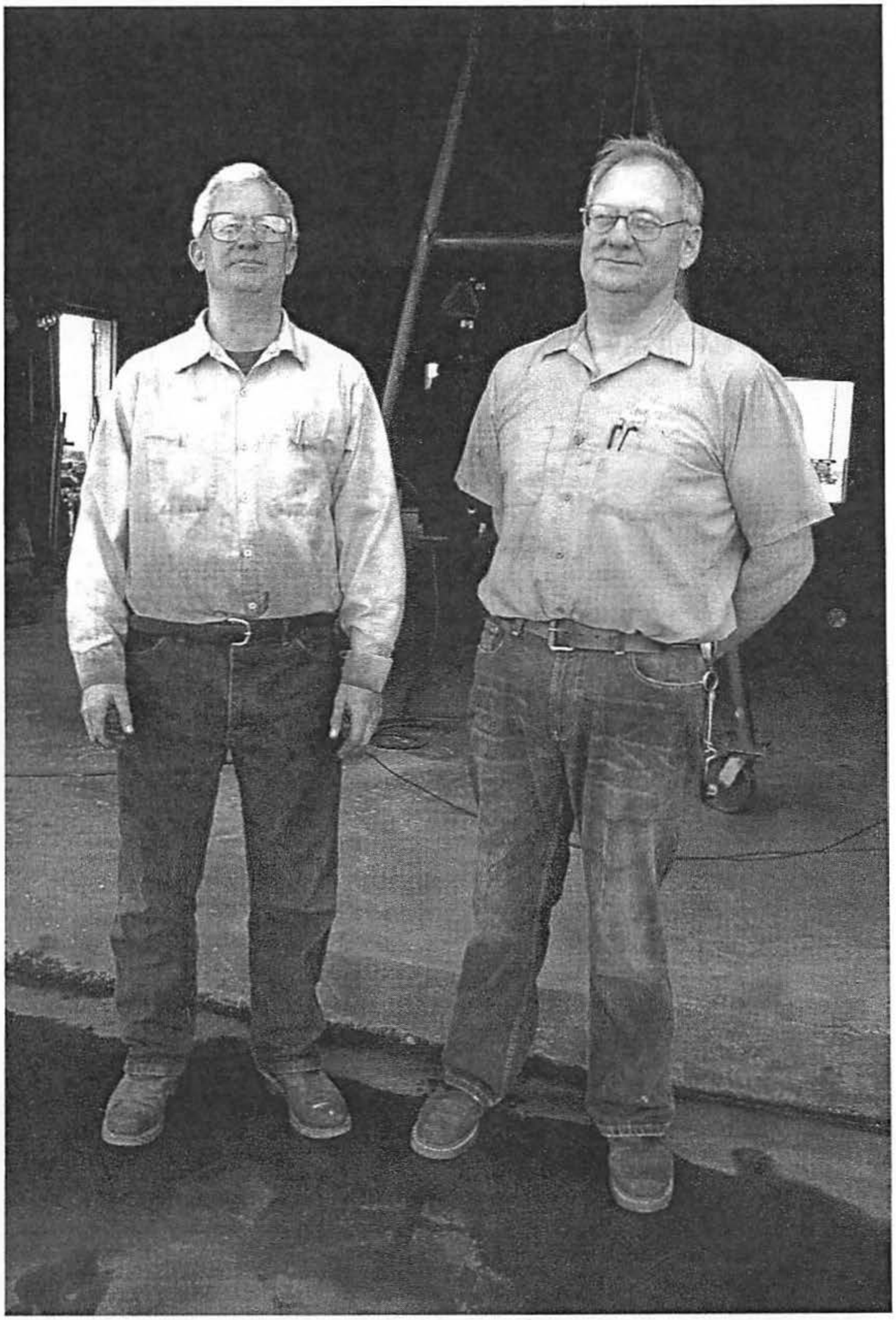
The Louisiana landscape can be a confusing one to behold.[4] Returning to Louisiana in the 1980s to film a documentary about "Cajun Country," Alan Lomax imagined he was weaving his way through marshes as he traveled the two-lane highways between Mamou and Eunice: "I want to share with you one of my most extraordinary experiences: driving down a misty road, past shining silver marshes that are so typical of that area. Of course, it's all low-lying. You're always draining water so you can farm. It's a rice area." There are, in fact, a few marshes sprinkled about the area, but they are small and infrequent. Instead, what Lomax found himself walking on was the northernmost portion of the West Gulf Coastal Plain, which runs from the Texas-Mexico border to the Mississippi River. The land was once prairies of tall grass only broken by tree-lined bayous.

These prairies could not have been more stereotypically American if they had been captured on film by John Ford. Long the province of Native American groups that enjoyed the area as a rich resource of game and fish, Louisiana's prairies were first colonized by Acadians (Cajuns), who ranched it extensively, replacing the native buffalo with European cattle. In some cases, especially along the coasts, they practiced a tradition they had brought with them of building levees around marshy land made marginal by saltwater intrusion and draining the fields off when they were flooded by rain. This practice of reclaiming marsh land for grazing by cattle continues to this day.

The real agricultural revolution came to Louisiana with the third wave of German settlement toward the end of the nineteenth century and the realization that the thin top soil, with a firm clay pan beneath, and relatively flat land could be turned to advantage by flooding it for rice cultivation. Rice is water tolerant and flooding the fields in which it is planted is an effective form of weed and pest control. Between the two systems of land use, draining a field to graze cattle on it or flooding a field to cultivate rice, the operative pairing in south Louisiana is not wetland or dry land but whether you are "pumping on" or "pumping off" water.

Water is managed by pumping into an established network of levees that, in the rice producing prairies, twist and arc across fields. The levees manage the landscape of the prairies, which has gentle drops of only tens of feet over a mile or more. There are a few places where one can glimpse the terracing that is, quite literally, all around, but for the most part it appears to the casual observer as simply a series of ponds. When the rice is high, the levees practically disappear and only a trained eye noticing the difference in vegetation textures can discern them.

The levees are "pulled up" in the fall, usually after soybeans have been harvested, and they divide fields into a series of "cuts" within which a farmer either seeds rice or crawfish. The cuts are imagined as a series, moving water from the highest point to the lowest point. The goal is to limit the difference between the high side of a cut and the low side to being less than an inch. Despite what some may think about abuse of water, or the spill off of agricultural chemicals, farmers do not like to pump a single gallon more of water than they have to, nor do they want to lose one ounce of any pesticide, herbicide, or fertilizer they have applied. In both cases, it is money lost.



The Olinger brothers, Dale and Gerard, at their shop in Louisiana, 2009

By late July, the rice turns golden and the levees re-emerge as striking, bold green lines. All the drains and curtains are pulled, and farmers hope for a few dry weeks so that they can put combines in the fields to harvest the rice. Farmers generally prefer that the ground either be fairly dry or "sloppy wet." In both cases, it is easy to get a combine through a field. The worst case is when the topsoil appears to be relatively firm and can be easily walked upon, or driven upon by light gear like a pickup truck, but sticks to the wheels of a combine as it tries to ply its way through the thick mud. It makes the large vehicles hard to steer, causing them occasionally to slip off course, and the engine has to be run harder to make it through each pass. Under such conditions, it can take more time, which may or may not be available, and more fuel to complete a harvest. Both are costly.

Hydraulics

In some ways, hydraulics is at the center of this history. Pumping water onto fields, pumping it off. Pulling levees up to hold water and plant rice. Pulling them down for better drainage for soybeans. Certainly one dimension of hydraulics is simply about moving water around. Another dimension is the pooling and channeling of water into canals so that it will power machines: water's motion is converted into energy. There are no water wheels in south Louisiana; its relatively short topography does not provide on a regular basis the kind of pressure behind water flows that can produce reliable power.

Water under pressure is a poor transmitter of energy anyway. It transforms too readily from one state to another: apply too much pressure and it turns to steam. It doesn't help that water and steel, the chief structural material of our time, also have a rather tempestuous relationship: the iron in the steel is all too happy to pass its electrons to the oxygen in the water and become ferrous oxide, more commonly known as rust. Because of this, almost all modern devices use some form of oil in their hydraulic systems. Hydraulic machinery is, of course, all around us. Almost anytime heavy lifting needs to get done over a relatively short distance, it will get done by a hydraulic ram (sometimes also called a piston). Rams raise and lower the blades of bulldozers and power the movements of backhoes. Rams are the hidden power behind most elevators. (Contrary to popular belief, elevators powered by wires and winches are usually reserved for buildings of five floors or more.)

If you were to walk around a combine, the first thing that would strike you is its massive front wheels, which are taller than your head and so thick that were you try to hug a tire and reach for the rim, you would probably not be able to do so. Big tires for a big machine that gets heavier as it moves around a field, gulping great draughts of grain as it goes. Surely there must be a huge engine driving a massive transmission to power such a hungry beast. There is, but it is ten feet up in the air. And there is no transmission of the kind we find on cars and trucks, and even on other tractors. Instead, the engine drives a pump, which feeds the hydraulic motor that drives the wheels. (For those unfamiliar with hydraulic motors, simply imagine a turbine driven by oil instead of steam.) Hydraulic machines for a hydraulic landscape.

Hydraulic connections abound, too, on most tractors, powering front-end loaders, backhoes, as well as the great variety of equipment farmers pull behind them—harrowers, cultivators, plows, almost all of which have "wings" that are lifted when the unit is moved from one field to another, or passes down a two-lane highway, and then lowered when it is time to get to work. Indeed, when it is time to get to work, the device is usually lowered by raising the transport wheels up into the carriage, somewhat like landing gear raised up into an aircraft. All of this raising and lowering, digging and smoothing, is guided by hydraulics.

A substantial advantage to hydraulic systems is that they are closed: all oil pumped out to a piston or motor is driven back by leftover pressure into an oil reservoir from which the pump will draw when more work needs to be done. In order to do that work, the oil is pumped out under a great deal of pressure, which means the seals that keep the system closed must be extremely rugged and operate with reasonably small tolerances. A leak means a loss of power, as well as a loss of the very thing that conveys that power. It is the sealed nature of the system that brings us to the advent of the crawfish boat.

Water is the enemy of steel, but corrosion is a slow enemy. Abrasion is much faster, and grit comes in many forms. Most commonly it can be found in the small particles of clay or sand that are the inorganic constituents of topsoil. It can be picked up by the wind as a plow works the ground or churned up in water, but no matter how it rises up, it finds its way into every opening until it manages to get trapped somewhere. If nothing is moving, then all it does is build up. But if movement is involved, then the failure of some part is inevitable, if only through the slow careful grinding of one piece of grit on one small spot.

Every maker of machines knows this and everyone who maintains machines know it as well. In rice country, grit blows in the air as it does elsewhere, but it also hangs in the water. To keep the grit at bay for as long as possible, to delay the inevitable wear, and to make every piece of equipment last as long as it can, incredibly small tolerances are needed between parts of a machine. These kinds of precision are required of hydraulic systems. It was thus inevitable that hydraulics would find their way onto a vehicle that was slowly emerging onto the landscape, the crawfish boat.

History

As the commercial market for crawfish expanded through the 1970s, it became increasingly clear that there was room for more producers. The market had been dominated by crawfish trapped in natural habitats like the Atchafalaya Basin, but as the decade wore on, more and more farmland was being turned to crawfish production, either full-time or seasonally. All a landholder had to do was not drain a field after the autumnal rainy season or flood it back up after rice harvest—strategies varied depending on extant land use. Some fields could produce a crawfish "crop" all on their own: the animals are indigenous to Louisiana and practically omnipresent in any wetland area as well as those regions adjacent to wetlands. They live readily in roadside ditches and near the many irrigation canals and coulees that form an almost continuous web of water across the Louisiana landscape. If crawfish do not simply turn up by holding water on the land, then they are easily seeded.

Unfortunately for farmers, rice fields are not like swamps, which usually have channels through which one can run a boat with a conventional outboard motor. Rice fields are wide, flat, and very shallow. They are perfect for placing traps throughout the entire field, but walking in a flooded field is a tiresome affair, since booted feet plunge not only into water but into several inches of sticky mud. Farmers had to content themselves with working the edge of the fields, placing traps around the perimeter, and accessing those traps by walking along the rice levees with a five-gallon bucket, or two, in hand. Their routine was to empty the traps into one bucket and then re-bait the traps from the other bucket, returning to a provision point when either the crawfish bucket was full or the bait bucket was empty.

But everyone could see all that unused area in the middle of the pond just begging for traps to be placed in it. A few hardy individuals put some traps down and worked their fields by pulling washtubs or toddler splashing pools behind them: if it floated and could hold crawfish reliably, it was worth trying. Some truly hardy individuals pulled or pushed johnboats—

light aluminum-hulled scows sold widely and cheaply throughout the United States for use as fishing boats—through the fields. There is even documentation of one farmer hitching his boat to a horse. No matter what other equipment went into a field or pond, the farmer followed and waded until either all his traps were empty, all his sacks were full, or all his energy was gone.

As productivity in these fields rose and demands for a commercial crop rose, there was clearly a need for a way to move more easily and more quickly through the traps. Normal outboard motors simply could not operate in the shallow waters of flooded rice fields. A few farmers tried the newly-manufactured Go-Devils, a kind of outboard motor that was the pre-cursor to the modern surface-drive motors also manufactured in Louisiana. Even shallow-drive outboards like the Go-Devil proved hard to use in rice fields, where the draft can be as little as eight to twelve inches. What everyone wanted was a machine that could make its way through the field at something like a man's pace.

As luck would have it, the very first idea was the right one, but its appearance would spur a period of wild creativity in which any number of possibilities were tried out. Some took lawn tillers and hung them off boats; others built custom gear reductions or used a system of belts and pulleys in an attempt to take the high RPM of most small bore engines and tie them to some sort of steel driving wheel. But everyone was essentially trying to replicate what Ted Habetz and Harold Benoit had simultaneously arrived at as the solution, though Habetz was the first to demonstrate the power of the idea.

Habetz's boat premiered in the fall of 1982, at a field day hosted by Louis Kramer. The day was designed to mimic those held by local agricultural centers that had not yet turned their attention to the growing interest in commercial crawfish production. Kramer was someone who always kept the big picture in mind, and so he was simultaneously interested in growing the market for crawfish and making sure to attend to expanding local production capacity. Kramer had invited folks to come out to talk and compare notes. His plan was to have Amos Roy of Beaumont, Texas, demonstrate a harvesting machine. And certainly the buggy, which looked a bit like the lunar land rover set down in the middle of a muddy Louisiana rice field, got people talking, but it appears to have been eclipsed that day by a johnboat-come-lately that was built by Tedmon Habetz, who wasn't entirely sure what he had just gotten himself into.

The Habetzes are a German family from "the Cove" as Roberts Cove is known among its denizens, but Ted Habetz did not grow up there. Instead, his father farmed near Loreauville, which is something of a center for boatbuilding in south Louisiana. It is the home of a number of boatyards, none of which have anything to do with the current story — though it is interesting to note that neither the crawfish boat nor the surface-drive motor were produced by dedicated boat builders. Habetz's role as the man credited with inventing the modern crawfish boat began in 1964, when his father decided not to drain one of his fields that had been flooded by Hurricane Hilda (which perhaps hammers home better than any analytical flourish the idea that Louisiana natives understand the landscape differently). Instead, his father started crawfishing it. In the years that followed, the Habetz family crawfished it like everyone else, using set traps and working from lightweight johnboats pulled or pushed through the water.

In the fall of 1982, shortly before Kramer's field day, Habetz's brother Bruno built an eighteen-foot boat. It was pulled through the water by a spoked wheel turned by a worm drive pulled from a combine. Ted Habetz built a somewhat smaller boat with a chain drive. When Bruno received an invitation to the field day, he suggested that his younger brother should come along and bring his boat, too. In the period between the invitation and the day itself, Ted, ever the engineer, decided to take out the chain drive and install a hydraulic system. On the day of Amos Roy's demonstration of his crawfish buggy, Harold Benoit remembers seeing what he called "the first combine that anybody had ever seen." Admiring what Habetz had done, Benoit turned to his friend Lawrence Adams and said, "Look, it's my boat."

Working entirely independently, Benoit had arrived at much the same conclusion as Habetz, though he had not yet figured out how to get his boat down to a workable speed. As soon as he had done so, a number of Benoit's friends and acquaintances immediately pressed him into making them boats. And Habetz reluctantly founded Crawfish Combines, Incorporated, which would go on to make three hundred boats over the next ten years.

Neither Benoit nor Habetz intended to become manufacturers of crawfish boats, but a revolution had begun and they found themselves to be leaders, or at least suppliers. Over the next two decades, others joined them. Some were welders, like Greg Frugé of Eunice and Clayton Courville of Kaplan. Others were fabricators like Kurt Venable of Rayne and Mike Richard of Richie. Others, like Gerard Olinger of Robert's Cove or Jimmy Abshire of Kaplan, were makers and/or repairmen of agricultural equipment. And thanks to vocational agriculture programs still active in area high schools, a large percentage of farmers were able to weld together the necessary parts to turn a fishing boat into a crawfish boat. Within a few years, it became a common sight to see a farmer sitting in a boat being pulled by its own front-wheel drive.

But almost all modern crawfish boats are rear-wheel drive, a change that occurred around 1985 when one maker, Gerard Olinger, responded to increasing complaints by farmers about the difficulties they were having crossing levees with the front-wheel drive boats. The problem was twofold: first, most of the boats were using fairly lightweight engines and wheels, in part to keep costs down because no one was sure if anyone would pay more, and, second, there is the impossibility of the physics of pulling a boat across a levee from a wheel attached to its bow as the bow noses up into the air. There is just not much traction on air. A lot of farmers had working solutions, but they mostly involved driving a post in at a crossing point and winching the boat across.

Working with a farmer, and friend, Jerry Heinen, Olinger put the driving wheel in the back of the boat, creating a boat that could crawl over levees. Unfortunately, the power delivered to the rear of the boat crushed the lightweight johnboat hulls everyone had been using. Olinger's solution was to build hulls of a similar size, but made of thicker aluminum sheets and with much more bracing. The durability of the custom hulls combined with the ease of use of the rear-wheel-drive boats proved popular. In part, they were popular because farmers were driving the boats faster, covering more ground in a day, making more money. Driving fast in a boat which sat a little low in the back thanks to the drive unit wasn't a problem: the bow of any scow will tend to push up a little bit as speed increases. Turning fast proved to be something of a problem though: water was slipping over the top of the boat's side at the back of the boat. Olinger's initial solution was simply to raise the sides of the boat at the back. His more enduring solution was to widen the boat to make the boat more stable and more buoyant, and thus less prone to swamping.

It wasn't long before he and fellow boat makers such as Mike Richard and Kurt Venable took advantage of their custom handwork to build hulls better suited to the task, and so they used wider sheets of aluminum to build five- and six-foot wide boats that could carry more crawfish and had greater stability while being pushed through the water.

Form

There were more innovations to come, as will be discussed below, but with this one revision, the moving of the driving wheel from the front of the boat to the back, the basic form of the crawfish boat was established. This was the form that Mike Richard used when he began building boats in the late eighties and the one that Kurt Venable adopted when he began building in the early nineties. Between the two of them, they have become the most prolific of the builders. Richard produces on average two dozen boats a year. Venable slowly ratcheted up production, and he now regularly turns out seventy boats a year.

But what is a crawfish boat? How to describe an object that seems like something imagined by Rube Goldberg? It is clearly a boat, and yet it did not arise out of a maritime tradition. It is a boat made by farmers and metal workers who refer to the bow as the front and the stern as the back. With the exception of Venable —who used an entire vacation to study traditional boat building —none of these men have any interest in boats apart from getting in one to go fishing. And some not even that.

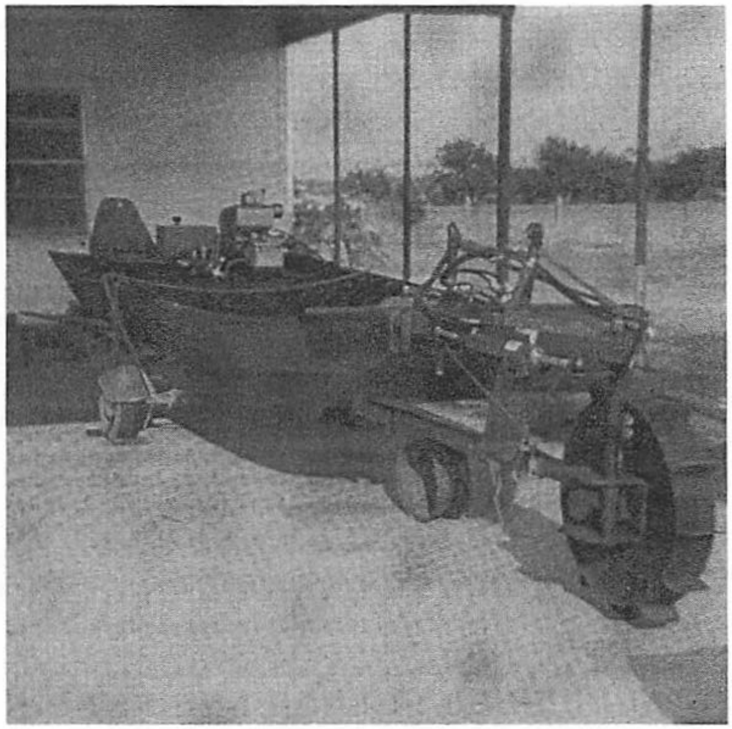
Still, the crawfish boat is undeniably a boat, and any account of it would be remiss if it did not take up the boat portion of the vessel, which is, in form, a scow with a square bow and transom. While the transom stretches across the entire width of the boat, there is typically about a foot of taper from the standard width of the boat to the tip of the bow: five-foot-wide boats taper to four feet at the bow, six-foot boats to five, or, in other words, about six inches on each side. The gentle curve up from the bottom of the hull to the bow typically stretches across the same three foot length as the narrowing taper, reducing the depth of the hull from eighteen inches just in front of the front wheels (more on these in a moment) to three inches at the nose. At the stern, the transom is vertical for the top two-thirds and then breaks between six and ten inches from the bottom to rake forward. This cut to the transom keeps the rear edge of the boat from digging into the earth like a bulldozer blade as the boat portages from one field to another.

Early boats by Olinger had a few thwarts, structural members that cross the width of a boat, or a few braces, which can be placed anywhere, while he experimented with ways to control and contain stress to the hull. Venable maintains thwarts in some fashion with his use of small, one-inch by two-inch aluminum I-beams that run across as well as fore and aft in his boats to strengthen and rigidify his hulls—the structural network is hidden by plywood sheets that make the boat's deck. In contrast to Venable's decked hulls, Richard, and now Olinger, prefer an open plan, depending upon the steel bench that holds the engine and the operator and which sits athwart the hull a few feet ahead of the transom as the principal lateral brace. The sides of all the boats flare only a little, a few inches of difference between the edge of the bottom sheet of aluminum and the edge of the gunwale rail that all the builders use to cap the narrow sheet of aluminum that forms the side of the boat.

The hull is thus made up of only a few sheets of aluminum, a five by fifteen-foot sheet that lays flat, starting at the transom until it curves up to the bow. On top of that is welded two fourteen-foot-long by eighteen-inch-high sides, which taper at one end to help form the scow bow. The transom is the width of the boat and a little bit taller than the sides when it is first cut out. The extra height accommodates a forty-five degree bend that, by clipping the trailing edge of the boat a bit, makes it easier to cross levees. The final main piece of aluminum sheet is the bow deck, which is attached to the tip of the bottom hull sheet as well as to the side sheets, wrapping back to form the boat's nose and giving the bow structural stability and strength.

All this strength is required of a vessel that regularly crashes into a levee, bellies onto and over it, and then heaves itself from its beached state into the next field. To do so requires a great deal of power and an extremely robust yet incredibly articulate channel for that power. Every modern crawfish boat has a steel arm that holds in its grasp a cleated steel wheel. The arm is hinged to move up and down in order to allow the wheel to float, in the mechanical sense of that term, so that it may find the bottom of a flooded rice field but later swing up, in relation to the thrust line of the boat, when the hull angles up over the levee. The arm must swing down again when the boat clears the levee but the arm itself has not. It is usually at this moment that the operator uses a hydraulic ram to push the arm down to force the wheel to get traction. Another ram swings the boat from side to side, but how that turn is accomplished varies from maker to maker. All the arms are, on average, about six feet long, and they hold wheels that are anywhere from two and a half feet to three feet in diameter. Mike Richard's arms are hinged at the very back of the boat; Gerard Olinger's arms are hinged just ahead of the fork that holds his twinned wheels; and Kurt Venable's arms turn the wheel itself. While both Olinger and Venable use rectangular tubing to fabricate the arms of their drive units, Richard uses three-quarter-inch-thick flat steel bent somewhat like a "P", not only to put the wheel on center with the arm itself, but also to give the flat bar greater rigidity to prevent it from twisting.

The hull is a big aluminum box to which the steel drive unit is attached. The problem for each builder is that the drive unit is so powerful it is quite capable of taking the hull and crumpling it much like you or I might do in



One of the early crawfish boats built by Harold Benoit.
Photograph courtesy of Harold and Juanita Benoit

An Olinger boat fron the late 1980s or early 1990s,
with a custom hull and a rear drive

discarding aluminum foil. The marriage of the two parts is further fraught because aluminum and steel cannot be cemented to each other through welding but must be attached through some other arrangement, usually bolting. Both Richard and Olinger use braces; Venable has cleverly adopted the use of a pod, an aluminum box welded into the structure of the hull itself and onto which he bolts his drive unit.

All of this engineering is required in order to accommodate the demand placed on the boats to be able to power through any situation. In almost all cases, this involves muddy water and muddy land and quite often someone trying to get the job done as quickly as possible since crawfish season begins in winter when there is a great deal of wind that cuts all the more sharply as it races across mile after mile of cold, flooded fields.

All the boats are powered by small-bore engines running at a high, fixed RPM. The two engine makers who dominate this particular market are Kohler and Honda, though Yamaha, Vanguard, and Kawasaki are popular elsewhere in the region, and they are regularly used in surface-drive boats. The engines drive a pump that simultaneously feeds three hydraulic circuits: the drive wheel, the steering ram, and the ram that raises and lowers the drive arm. The operator of the boat sits in the rear on the right-hand side and controls each of these three circuits by operating a collection of valves, though each builder places the valves—sometimes clustered together, sometimes not—in different places on the boat. Immediately in front of the operator is a sorting table onto which he, or she, dumps the contents of a crawfish trap.[5] He then simultaneously sorts the keepers into sacks hanging off the table, dumps the small fry as well as any debris in the trap back into the water, and then re-baits the trap, all in time to stick it in the ground just ahead of the next trap, which he then plucks out of the water. He does all this while operating a set of rocker pedals at his feet that steer the boat left or right through the field. Steering is an important part of the rear-wheel drive boats: when the drive wheel is in front, the boat simply follows it. When the drive wheel is in back, the boat is always seeking some direction and must be more actively steered.

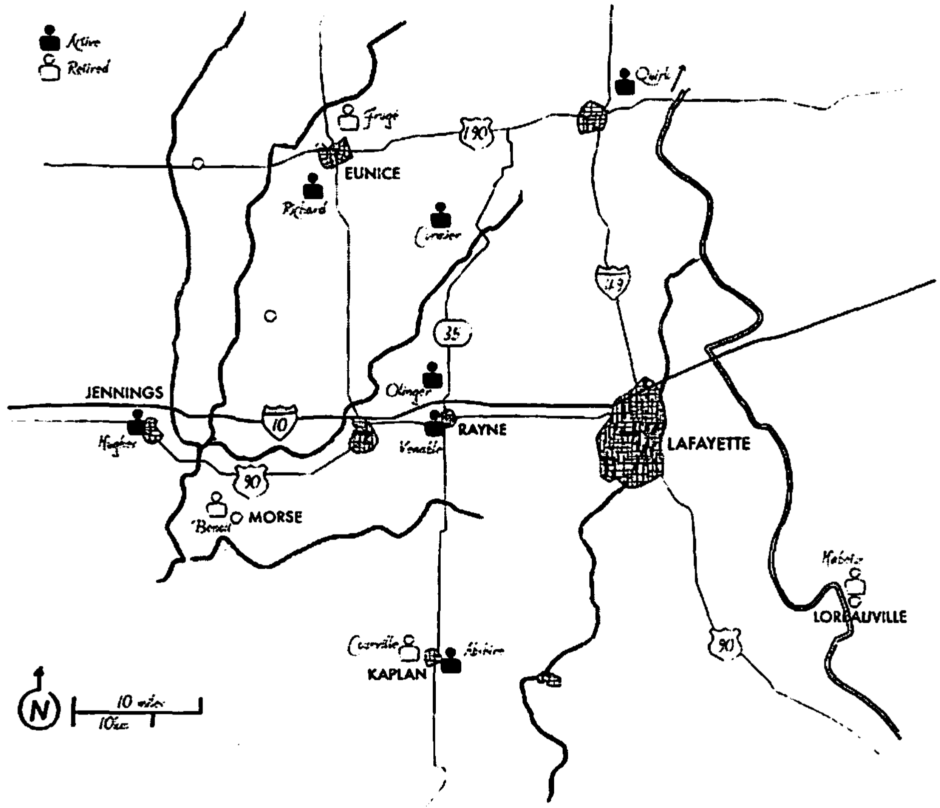
The cleated steel wheel at the end of the steel drive arm has been a part of the crawfish boat since its inception in 1983. The size and the width of the rim, the number and placement of the cleats, and the angle at which the cleats are affixed to the rim, have changed over the twenty-five years of active production, with makers staking out certain ideas as their own, which may or may not be adopted by others. One example is illustrative and recalls a point made earlier in this essay about the matter of abrasion and wear on metal parts.

While the cleats look like paddles, they are best thought of as treads, and in some ways they are clearly related to the old steel tires once used on tractors—sometimes called moon tires locally, perhaps in reference to the steel tires that made it possible for the lunar rover to navigate the thick dust of the moon's landscape. Because the entire drive unit is hinged so that the wheel will drop to the bottom of a field, the cleats are pronounced in order to give the boat traction through the soupy mud. As the cleats push along, they are ground down by the sand and clay grit in the mud, and in some areas it is not unusual for a three-inch-tall cleat, typically made of a one-quarter-inch-thick steel plate, which has been cut into a rectangular shape and then welded directly onto the rim, to be worn down to a one-inch nub within a few years. Such wear results in the wheel being brought back to a maker for repair, which means the old cleats must be cut off with an acetylene torch so that new ones can be welded on, or the cleats must be cleaned up enough so that the new ones can be welded onto them. One maker, Kurt Venable, grew tired of the constant repair work and decided to weld a length of steel rod along the entire width of his cleats. It worked. More importantly, not only did it reduce the wear on the cleats, it also gave the wheel better traction and, many farmers felt, lessened the damage the wheels did to fields. (Every trough that a boat makes in a field is one that will be met later on a tractor when the field is drained and plowed for rice or soybeans.)

Fluidity

A decade before Venable's innovation Gerard Olinger had been the first to equip boats with rear wheels. Like Venable, Olinger was in search of a solution to a problem he was facing: farmers were wearing out the hulls of their boats all too quickly. One farmer after another would bring in a boat whose hull needed patching. He finally asked and learned that they were driving their boats from one field to another, instead of, as had been the practice, of trailering them. Sometimes they even drove their boats down a gravel or paved road. His response was simple: "I thought as long as they were going down the road, they might as well have wheels."

To Olinger, the idea was a commonsensical response, but the effect in 1985 was to turn the crawfish boat into a full-fledged amphibious vehicle. As the boats matured during their first decade in production, so did the business of making boats, always with about a half dozen builders actively



Location of the shops

producing craft. The first two, Benoit and Habetz, eventually left the business, and others, like Greg Frugé and Clayton Courville, manufactured for a time and then left the field as well to do other things. The current makers are Kurt Venable of Rayne, Mike Richard of Eunice, Dale Hughes of Jennings, and Michael Quirk of LeBeau. Mike Cormier and his son always build a few extra boats each year to sell to neighbors and acquaintances. Jimmy Abshire and his brother Robert build a boat now and then in their shop down in Kaplan, and Gerard Olinger continues to keep his hand in the game by making the occasional boat, as well as doing a lot of maintenance and upgrading of boats.

All the men are familiar with the work of the others. With a stable form and individual innovations often quickly adopted by others, it would seem that all the boats must surely look alike, and perhaps to an outside eye they do. But to eyes adjusted to the landscape and adapted to seeing the differences that matter as well as the commonalities that bind everyone together, each boat readily reveals its maker, or makers.[6]

Perhaps the place where each maker's signature is most clear is in the drive unit itself. Gerard Olinger has long preferred two wheels permanently welded into pairs and driven by two hydraulic motors. The steel arm of his drives slopes gently up to a hinge point that comes just ahead of the fork that holds the two wheels. Such a hinge placement means that his boats turn differently from Mike Richard's boats, whose drive arms hinge right at the back of the boat and hold a single, massive steel wheel that is driven by a single hydraulic motor. Richard feels confident that this is sufficient power for his boats, which are clearly designed to be much lighter in weight and more flexible in structure than those of Kurt Venable, who incorporates a significant number of structural elements in his hull, which is driven by a single wheel driven by two motors. A Venable boat turns at the wheel, which is held in place by a vertical fork that comes from above, thanks to a z-bar drive arm. Hughes models his boats after Venable, and Quirk models his after Richard. All of these are different from a Cormier boat or a Courville boat, as well as those boats made by the Abshires.

There are only a few manufacturing secrets here and there that each man possesses because everything there is to know is in the boat. Every hard won idea must manifest itself in steel or aluminum where it is available for all to see, analyze, and judge. And there is almost no end to the discussion of who makes a better boat or whose boat is best suited for which soil or terrain. The makers themselves are judged for the quality of their boats, their willingness to customize a boat, and their willingness to repair or modify a boat made by someone else.

The crawfish boat is the *nonpareil* of an imagination that is not anxious about the transmutation of land and water. If, for the rest of us, there is some lingering concern about contamination, that land made wet can never be trusted as land again, then the people living in south Louisiana do not share it. Wetlands are drained. Prairies are flooded. And then drained. And then flooded again. A rolling landscape is terraced to hold rice and crawfish, and low-lying fields are leveed to graze cattle.

Most importantly, an amphibious vehicle has arrived that allows farmers to become trappers, catching crustaceans that feast on last year's crop and selling them to an ever-expanding market. Within this ecosystem exists a machine that fully participates not only in the natural landscape but also in the cultural landscape. There are, for example, no patents on any part of the crawfish boat. This is not because the men who make them are not fierce competitors, nor is it because they are unaware of intellectual property laws or contemporary trends in patents and copyrights. In addition to his boat business, Kurt Venable mills a variety of custom parts for other manufacturers using his own CAM system. Gerard Olinger orders parts from his shop in the middle of Roberts Cove via his satellite service. Both of them are fully aware of the full force of the contemporary legal apparatus surrounding technology. On more than one occasion, Olinger has remarked that local fabricators always fill niches perceived as too small or unprofitable by large manufacturers. Both of these men, and any of the others, are fully capable of pursuing the legal steps necessary to mark some facet or another of the crawfish boat as belonging exclusively to him.

And yet no one does. As far as each maker is concerned, their reputations as builders, and the reputations of their boats—obviously, the two are intertwined—are well known throughout the community.[7] Venable prides himself on making the strongest hulls, Richard on flexible hulls, Olinger on his dual-wheel drives. Each has also borrowed ideas from the others. Such borrowing is not always from direct observation; it can often come in the form of indirect reporting: a farmer admires something on another farmer's boat and then requests that it be added to his own boat. Sometimes the addition catches on more broadly; sometimes the logic of the addition or emendation is obvious to the maker in a way that leads to further innovation.

Creativity draws from the deep well of common knowledge and experience. Farming, like any other activity, presents a series of problems to be solved, but how those problems are solved is largely determined by how they are framed or understood, and that understanding is itself a function of individual and collective experiences that are constantly being negotiated, not only in terms of content but also in terms of context. Thus, the framework for any solution, and thus the solution itself, is really a function of which individuals within a community are involved, which individuals have contributed, and who has accepted their contribution.

Each of the individuals in a community has to be understood as someone, not only with particular abilities and self-perceived roles—only a farmer, a farmer who occasionally fabricates something when he needs it, a farmer who actively fabricates for himself and others, a fabricator who farms, or strictly a fabricator—but also in term of personal proclivities. For example, one fabricator is a tinker by personality, another is a born competitor and must win in whichever domain he enters, and yet another is a raconteur of exceptional abilities. Together they make up, not a homogeneous community, not even a cohesive one, but rather a loose network of individuals who, through their presence, maintain a network of ideas that have evolved over time. Those ideas are, of course, situated in a value matrix that has remained fairly stable for at least three decades, and it is reasonable to assume the stability extends further back in time.

It is an ecology, and there could be no more striking example of the creativity of such an ecology than a modern metal machine gracefully wending its way through the water to the clatter of its small bore engine and then lunging itself onto dry land, where it blithely rolls down the road to the next bit of water. This complex story of simultaneous invention and diffuse experimentation is itself set in a larger, unfolding social and economic matrix that is at the heart of modern American farming, where farm subsidies and price supports for crops are part of growing rice but not of trapping crawfish.

The crawfish boat is an artifact born of modernity, but it realizes a number of traditional ideas within its various contexts. Traced through these various contexts, the artifact, be it a story or a boat, reveals that it is always more than a thing. It always expresses something about the individual who made it and the individual who uses it. When those two individuals are part of a larger group with shared ideas, the artifact cannot help but express something of that culture as well as the landscape on which the group resides and the artifact operates. It is the peculiar charm of the crawfish boat that its destiny was to be born on an ambiguous landscape. Its mobility, no matter the circumstance, allows us a glimpse into how creativity has been practiced in a particular place at a particular moment in time. Perhaps no more, but certainly no less.

Notes

1. Robert Sternberg's *Handbook of Creativity,* although ten years old now, offers a nice survey of the various approaches within the larger field of creativity studies. Very near to folklore studies, and to me, is a wonderful essay by my colleagues Carmen Comeaux, Janet Schexnayder Elias, and Subrata Dasgupta, which, while arguing for the rarity of the "highest form of creativity," do so within contexts akin to those to which folklorists are accustomed: storytelling or the making of artifacts. Their "cognitive case study" method is easily adapted to folkloristic uses, and I have deployed some of the case study tropes here. (For more of this kind of work, see Nersessian's study of a research laboratory [2006].)

2. Previously, in his native Virginia, Glassie had turned to the testimony of houses to begin to discern how a given group of people on a given piece of land on this small planet of ours could find themselves so divided. *Folk Housing in Middle Virginia* is famously devoid of people, focusing instead on a large collection of houses and the permutations of their spaces, but Glassie was clearly not interested only in

the houses: the diagrams that bedevil so many readers reveal that the houses are both projections of, and shells for, human imagination. That true object of his study is revealed in the opening and closing of the book: descriptions of a land of increasing alienation. At the beginning, a photograph centers on a sign for a Klan rally (1975:4), which is explained at the end of the book: "Unsure of his situation, [the white farmer] and his neighbors build identical houses with floor plans that suggest withdrawal and facades that suggest impersonal stability. Personal energies are removed from the immediate community and invested in abstract ideals, such as racial superiority, nationalism, or artificial, symmetrical order" (190).

3. Better documented in the larger project upon which this essays draws is the fact that the crawfish boat is not the first boat to be imagined as amphibious. The pirogue, first adapted from the local indigenous peoples' dugouts and later planked in the late nineteenth century, is a boat often said to be able to "glide on the dew." The crawfish boat itself comes on the heels of the beginning of what is now known as the "surface drive outboard" industry, which began in the late 1970s in Louisiana. For more on the early history of boats in Louisiana, see Malcolm Comeaux's survey (1985). For an example of the amphibious boat as imagined, see George Reinecke's translation of "A Louisiana Black Creole Version of 'The Land and Water Ship'" (1994).

4. On the second anniversary of the storms, reporting on the current state of things in New Orleans, a *National Geographic* article led off with: "The *sinking city* faces *rising seas* and *stronger hurricanes,* protected only by *dwindling wetlands* and *flawed levees.* Yet people are trickling back to the place they call home, *rebuilding in harm's way*" (Bourne 33; emphases in the original). Those five adjective-noun pairs beginning with "sinking city" and "rising seas," build to a kind of apocalyptic inevitability. The contradictory nature of the gerunds—first "sinking" and "rising" and then "dwindling" and "rebuilding"—underlines the absurdity of living on, or in, an ambiguous landscape. The nouns tell much the same story: city, seas, hurricanes, wetlands. *National Geographic* is not alone in seeing absurdity in living in, or on, wetlands: theirs was simply the most compressed, the most poetic.

5. Since its inception, the modern crawfish industry has been a family affair with women, whether they are wives or daughters, playing as much a role as husbands and sons in gathering, sacking, and selling the crawfish. Like other agricultural contexts where women are typically less involved with farm equipment and more involved in the business of the farm, women have played less of a role in the formal development of the boat, but it should be noted that Cheryl Venable, herself a Leonard from Roberts Cove, is an integral part of Venable Fabricators and her contribution and those of other women is one yet to be fully understood.

6. Few boats, except when brand new, survive in the field exactly as they were when they left their makers' shops. All farm equipment breaks under regular use and is often repaired, and perhaps modified, in the field by farmers themselves, many of whom are quite handy with a welding rig. (To be sure, almost all of them

use the much less expensive stick welders, and so their welds tend to be revealed by closer inspection.) It is also the case that boats made by one fabricator will be brought to another for repair and/or modifications. I have seen Olinger drive units on Venable hulls, and Richard-style sorting tables on Cormier boats.

7. Reputation systems are commonly discussed within the context of online communities or domains, where the automated systems are subject to scrutiny for their vulnerability to attack. But a peopled system is a much more complex and interesting affair, and recent scholarship has explored how such systems, and their peopled networks, might lead to more humane economies (Benkler and Nissenbaum 2006).

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