Picturing Labor: A Visual Ethnography of the Coal Mine Labor Process[1]

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A variety of descriptions of the mining labor process are available including corporate, union, and government records, but the most vivid depictions are found in photographs and the stories of the miners themselves. Ethnographic accounts and photographs share the indexical, "I was there" quality that produces a compelling sense of immediacy or even "truth." However, the "truths" depicted in the two forms of discourse – words and pictures – are frequently antithetical and contradictory and therein lies an issue of profound interest to sociologists.

Historic photographs of mining depict the *mining* process from the perspective of capital. They represent mining as rational, orderly, sequential, modern, efficient, purposeful and practical. In the photographic view, labor appears alongside machinery and raw material as simply another factor of production.

Photographs of men and machines engaged in the mining process can only represent the *physical dimensions* of objectification. As Harry Braverman (1974) explained in a discussion of alienation: "Considered only in their *physical aspect*, machines are nothing but developed instruments of production whereby humankind increases the effectiveness of their labor" (p. 227). Needless to say, photography is powerless to represent the labor process in anything other than its "physical aspect." The language of photography is one dimensional in the way that Marcuse (1967) described operationalized concepts.

Quoting the philosopher of science, Stanley Gerr, Marcuse (1967) objected to the linguistic operationalization that:

> '… consider(s) the names of things as being indicative at the same time of their manner of functioning, and the names of properties and processes as symbolical of the apparatus used to detect or produce them.'.… (T)he functionalization of language expresses an abridgement of meaning which has a political connotation. The names of things are not only 'indicative of their manner of functioning,' but their (actual) manner of functioning also defines and 'closes' the meaning of the thing, excluding other manners of functioning.
> So it is with photographs. Photographic images identify the thing with its function. (pp. 86–87)

Photographic images constitute an operationalized language that is *incapable* of expressing alienation or negation, potential, irrationality, alternative meanings, and dimensions of time. As I will demonstrate, aspects of the labor process that miners discussed in detail: contradictions, alienation, the double transmogrification that turned men into mules and mules into men, the counter-finalities of dust explosions, and so on, are underlying social relationships and processes, not surface images that can be photographed. Photographic images are specific kinds of operationalizations that identify appearance with reality. To again apply Marcuse's (1967) critique of language to the study of photographs:

> This language, which constantly imposes *images*, militates against the development and expression of *concepts*. In its immediacy and directness, it impedes conceptual thinking; thus, it impedes thinking. For the concept does *not* identify the thing and its function. Such identification may well be the legitimate and perhaps even the only meaning of the operational and technological concept, but the operational and technological definitions are specific usages of concepts for specific purposes…. Prior to its operational usage, the concept *denies* the identification of the thing with its function; it distinguishes that which the thing *is* from the contingent functions of the thing in the established reality. (p. 95)

Miners also spoke with one voice, depicting the *labor* process from the perspective of the worker. Miners' words represent the mining process

as an alien activity – fundamentally irrational, exploitative and danger-
ous. Photographic and verbal texts can thus be understood as struggles
to assert meaning. These two material forms of discourse, photography
and language, constitute battlegrounds, blood-soaked texts on which
opposing forces inscribed their different names for the world. Alan
Sekula (1983), in his history of representations of mining, described one
element of the opposition as between miner and mine engineer:

> The culture of mining communities is frequently both mili-
> tantly proletarian and rich in a sense of rural continuity and
> resistance to industrial discipline. The culture has frequently
> collided with the logic of industrial rationalization. The dis-
> course and practice of mining has come to be bracketed by two
> antagonistic figures: the underground toiler, "backward" and
> often militant, and the mining engineer. (p. 204)

As I shall demonstrate, photographs are one of the voices of the min-
ing engineer and the mine owner. Photographs emphasize science,
engineering, system and sequence. They show us new machines, ideal
practices, clean workplaces and efficient happy workers. The miners
in their talk, tell us of hardships overcome, things that did not work,
dangers and irrationalities. Most of all, they speak of social divisions
that robbed them of their labor. They describe a material system the
main purpose of which was to make profits for the coal operators at
the expense of the workers.

Objectification and Alienation

Allan Sekula (1983) traced the origin of the rationalization of mining
by objectifying it in words and pictures back to Georgius Agricola's
De Re Metallica published in 1556:

> … with regard to the veins, tools, vessels, sluices, machines and
> furnaces, I have not only described them, but have also hired
> illustrators to delineate their forms, lest descriptions which are
> conveyed by words should either not be understood, or should
> cause difficulty to posterity… (Agricola as cited in Sekula 1983,
> p. 205)

Pictures in Agricola's book show the technological division of labor,
the functioning of machinery, tools, and what Sekula (1983) termed

Figure 1

 Man trip preparing to enter a mine near Durham England in 1925. The haul-
age way is spotless, the roof is white because it has been rock dusted to prevent
explosions, the group of foreman and firebosses on the left tells us the mine has
been inspected before the men go to their places. This is a photograph of an
orderly, well run mine, typical of the type of image that corporations cause to
be created by company photographers. *Beamish Museum.*

"the temporal logic of cause and effect" (p. 211). In this paper I will
follow the mining process according to this same logic. We begin in
the beginning. Photograph number one shows a man trip preparing
to enter a mine.

   Sekula (1983) noted the way Agricola used words in (re)presenting
the rationality of mining, but Sekula noticed something he thought
illogical in Agricola's account:

> The bureaucracy of mine management is neatly described
> down to the level of foreman. Finally Agricola describes a new
> time discipline, contrary to agricultural rhythms, a discipline
> which anticipates the continuous productive cycle of the fac-
> tory. The 'twenty-four hours of the day' are to be 'divided into
> three shifts,' although the foremen is not to impose the third,
> night shift, 'unless necessity demands it.' In the one jarring
> passage among these pages of relentless, rational accounting,
> Agricola remarks that the miners on the night shift 'lighten
> their long and arduous labors by singing, which is neither
> wholly untrained nor unpleasing.' (p. 208)

In the interview with Welshy Mathias we asked him what he remembered about Wales. He was eighty when we talked to him, and had started working in 1907 in the Rhondda Valley made "famous" in the film "How Green Was My Valley." He told us he came from East Road Tylerstown, and showed us a photograph in an old *National Geographic.*

WM: Well we worked in those mines. My brother Joe and I both worked in the mines back there, before we came here, before we were twelve. Had to work to get something to eat. … See, the miners back in Wales, especially the first mine that I worked in, they called it the slip. It was a slope like that, see. And they had a man trip, with seats on it. And they'd break out in song. And they had their seats set so the bases would sing together, the baritones would sing together, and they'd be going down the hill and they'd sing. (sings) "Coming home, coming home, never more to roam." And boy, I'm telling ya, that goddamn mine, it put something in ya, see, that's what it does. … It's pride, community spirit, all that kind of stuff, see.

Sekula seemed surprised by Agricola's inclusion of the singing miners in the otherwise rational and objective description. This may have been because Sekula's data sources were restricted to photographs and written texts; he did not have detailed access to the miners' culture of resistance. The text from Agricola testifies to the inseparable dialectic of miner and mine owner that constituted the industry. From the very beginning, there was a double appropriation: first of the miners' labor and second of the miners' image for corporate consumption. However, no matter how hard mine owners and their engineers attempted to appropriate mining as simply an objective scientific process, to suppress one pole of the dialectic, they could not destroy the miners' power to make history. Singing in the workplace signifies the miners' power to alienate the owners' finalities and objectifications in the creation of their own culture. In the photographic images of mining machinery and practices, it is the technological function of production that is foregrounded; the social relations of production including alienation and counterfinality remain hidden. This is not to argue against the use of photographers' views. They capture more vividly than words, the very real dimensions of function and objectification. The intent to produce coal is visible in the tableaus and arrangements of men, machinery, and the raw material that constitutes the total environment. The surface appearances of matter

in each tool and body posture tells of purpose, division of labor, and the technological orders of productive processes. This is an essential dimension to understanding. But it must not be separated from the other two inescapable moments: alienation and exploitation.

The miners describe in unforgettable detail, not only the functional labor process, but the inseparable irrationalities and alienations that made up every real experience. The difference between this sociological approach, and the engineering view, was spelled out by Harry Braverman (1974):

> … (O)ne is forced at the outset to choose between two essentially different modes of thought. The first is the engineering approach, which views technology primarily in its internal connections and tends to define the machine in relation to itself, as a technical fact. The other is the social approach, which views technology in its connections with humanity and defines the machine in relation to human labor, and as a social artifact. (p. 184)

The alienation of the worker is contained in the brute fact that he must employ tools made, not for him but for the purposes of others. Miners' relationship to the machinery and the coal is shaped by the fundamental conflict which Braverman (1974) recapitulated:

> The worker enters into the employment agreement because social conditions leave him or her no other way to gain a livelihood. The employer, on the other hand, is the possessor of a unit of capital which he is endeavoring to enlarge, and in order to do so he converts part of it into wages. Thus is set in motion the labor process, which, while it is in general a process for creating useful values, has now also become specifically a process for the expansion of capital, the creation of a profit. From this point on, it becomes foolhardy to view the labor process purely from a technical standpoint, as a mere mode of labor. It has become in addition a process of accumulation of capital. And, moreover, it is the latter aspect which dominates in the mind and activities of the capitalist, into whose hands the control over the labor process has passed. (p. 53)

I can imagine no clearer validation of Braverman's sentence than Tom Somsky's recollection of how his career began:

TS: I was 15. Well my dad got killed, see, 1911. And the super over there said, well, "When Tom gets big enough to work we'll give him a job." And that's what I got for my father getting killed. I got the job. So I started at 15.

The miners' every account of the labor process expresses pride at their skills, knowledge, strength, stamina and technological prowess. But in every fiber of their being they knew that there was more to it than that. Listen to the Amicarella brothers place emphasis both on the social relationships that are an essential aspect of the division of labor, and the connection to exploitation:

CA: … coal mining is challenging to any man, one day calls for one experience, the next day calls for another. And then, too, it's just like a bunch of fellows on a football team, or baseball team. They're always bullin' and reminiscing from one day to another and the day passes…. It's challenging and it's an honorable occupation. But we have never been given any consideration

LA: Never.

CA: Wages were always poor, conditions were always poor.

Pride and skill point to the human element outside the technical functions. The miners' position, as the animators but not the subjects of the productive process, was a specifically situated viewpoint, different in every respect from the capitalist, mining engineer, and photographer. This position led them to combine in unions, strike against their employers, and so on. This subject position is not, and perhaps cannot be, reproduced photographically.

The Labor Process

In the following discussion, I allowed the functional logic of the mining process to dictate the sequence of presentation: undercut, drill and shoot, load, dead work, haul and weigh. In tracing production I will examine photographs that depict the mining process, but the dominant voice in the discussion will be that of those closest to it. I'll show a number of photographs of the mining process and juxtapose those one-dimensional images with quotes from the miners.

Figure 2

Before the invention of machines, miners spent much of the workday undercutting the seam. This photograph shows miners using the broad blades of their shovels to protect their bodies from the sharp gob. *American Museum of Natural History, Smithsonian Institution.*

Undercut

Figure 2 depicts the miner's first task which was to pick a "kerf" along the bottom of the face to provide relief so that when the coal was blasted it broke into large pieces rather than being pulverized. Miners frequently had to lie in water, and on sharp rocks, and there was a continual danger that the face would collapse and crush the digger. Undercutting was physically difficult and required great skill. The undercutter controlled the pace for the entire mining process. Welshy Mathias described the work this way:

WM: Picks on each side. Lie down on your side … In the old country, and especially in low seams, one laid on the right side and one laid on the left. When they wanted to rest, why they'd switch. … If they worked quite a while on their left side they'll go back to the right. All day long, ten hours we used to work when I first started.

Keith Dix (1979), examining work relations in the coal industry, described pick-and-shovel coal miners as "…independent craftsmen who worked largely without supervision… (who) exercised broad dis-

Figure 3

A group of miners posed around the business end of the punching machine. The oil lamps on their hats suggest the picture was made before the turn of the century. *State Historical Society of Colorado*.

cretion in the direction of their own work and that of their helpers." He went on to describe undercutting as "… a highly skilled, arduous, time-consuming, and dangerous task … (thus) it is not surprising that management would seek cost-reducing, labor-saving machinery at this point in the production process." (pp. 163, 164)

Miners called the first generation of mechanical undercutters "punching machines." Miners who ran the machines were called "machine men" (see figure three). Punching machines and machine men, the very names speak of the alienation inherent in the exchange of qualities. The machine man served the punching machine making the conditions for it to operate. Instead of undercutting, the miner now spent his time laying track up to the face and brushing down the floor to make it level and even. The machine took a human form "punching" the coal with an action that directly mimicked the man with a pick. The machine men become machine-like – repetitively shoveling dust and holding the hammering picks on target.

Following Marx, Braverman (1974, p. 194) argued that it is not the technical nature of the machine that produced alienation but "invisible" (hence non-photographable) social divisions of labor which produced and controlled the machinery. Both writers described

Figure 4

The punching machine in 1915. The operator rides the buckboard and aims the picks while the miner on the right shovels away the crushed coal. Alex Bisulco showed photographs of the punching machine, while explaining how he did his job. Notice his language, "shoveling after the punching machine" "keep the coal ... out of the way." The machine now dictates the order of labor:

AB: I worked with the punching machine. I was doing the job this fellow is doing, cleaning, shoveling after the punching machine, you see.... That's the way we cut the coal. Its got one pick and they used to have big air compressors outside and they'd pipe the air into the mine all the way, all around. And that's what these machines run by, air. This is a buckboard and it'd take about four boards to cut across a room. And they'd start out and make a cut about four feet high and end up down to about one foot. And this fellow's job is to keep the coal that he cut out of the way all the time so he could cut it.

American Museum of Natural History, Smithsonian Institution (This image was printed in Humphrey 1960:76).

alienation as the social relationship between labor and capital which takes place by and through the machine:

Alex Bisulco showed photographs of the punching machine, similar to Figure four, while explaining how he did his job:

Figure 5

Southern Colorado Miners posed around a cutting machine. The "nips" (on the right) connected the machine to bare trolley lines. Mines generated their own power and used 440 volts DC. Notice another technological change, some of this crew have oil lamps while others are using the newfangled carbide lamps. *State Historical Society of Colorado.*

AB: I was doing the job this fellow is doing, cleaning, shoveling after the punching machine, you see. And they'd start out and make a cut about four feet high and end up down to about one foot. And this fellow's job is to keep the coal that he cut out of the way all the time so he could cut it.

Notice his language, "shoveling after the punching machine," "keep the coal … out of the way." The machine, not the miner, now dictated the order of labor.

Figure five is of miners posed around the second generation of undercutters called "cutting machines." Functioning like a huge electric chain saw, the "nips" (on the right) connected the machine to bare trolley lines. Walt Cieleski started working in the 1930's. He described the job of the "nipper" who was the machine man's helper. Notice the way that his description unites the technical operation of the cutting machine with the feverish pace of production driven by the invisible social organization:

WC: They would run two wires, a ground and a hot wire, 440 line, along the entry on one side of those rooms. And the end

of the wires was curved, and they'd call them nips … Well, if you hooked the wrong one first, the hot one first, see … why that could cause a spark … Well, hell, they just went up there and snapped the old nip on there. They was in a hurry, always in a hurry. You always had to highball, see.

Machine men were not paid a wage but by the ton, "piece work" functioned as a goad forcing them to labor at the frenzied pace of the coal loaders. This meant in practice that they cut corners, and took risks.

Some of the old timers raised still another issue about machinery. Except for the scrape of the shovel, they were used to loading coal in the extreme quiet of a cave. They were sensitive to every sound a pressure shift makes that might indicate an impending roof fall. Frank Wojtylka from Cokedale, explained:

FW: You can't hear a thing when that roof's working with them machines on. It makes so much damn noise that you can't hear a damn thing.… Usually when everything's still you could see that crack in the roof, cracking. But when that machine's working you can't hear a thing.

Machines inherently posed new dangers. Louis Bruger, remembered how one miner was killed:

LB: They had what they called a jack pipe, which will punch a hole in the roof of the mine, see, and then they had a point on the other end, and then there was a eye in the rope that pulled the machine, undercutting machine, and I guess they didn't have the hole hit just right and when the machine men tightened up the rope, well, just threw him off balance, and his foot come down on the bits and they shoved, drug him – into the machine.… and just chewed his leg off …

In almost all photographs the miners are having their portrait taken or they have been posed "as if working." The miners' work clothes and faces are clean, suggesting that the photography was carefully planned to take place at the start of the shift before any work had been done. The alienation that turned man into machine, the frenzied pace of production, dangers and difficulties are completely obscured by these portraits. There is no dust or smoke from the mining process. Unlike miners, photographers did not work in difficult conditions like

steep slopes, water, bad roof, or explosive gas. Dangers that miners talked about all the time – falling rocks, inexperienced miners, methane gas, and so on were elided from the images.

The single most important element in this analysis is the recognition that *at best*, photographs can only capture one side of the labor process. The technological division of labor called "conventional mining" is visible in the photographic image. But behind the image lay the invisible but much talked about social organization of labor called "contract work." Except as an element in the technological division of labor, as when the weighboss is seen at the scale, social relations could not be photographed. In life, the social and technological divisions of labor were inseparable, but only the technological division could be photographed. So photographers could not capture exploitation, the sense of urgency that was the piece-work system, or the alienation passed to the miners through tools. It is for these reasons that the use of such photographs as illustrations is misleading.

Figure 6

This Russell Lee photograph of a miner using a hand drill in 1946 was published on page 10 of the supplement to the report "The Coal Miner and his Family " (Coal Mines Administration, 1947). The text reads: "Next, holes are drilled in the face of the coal for the explosive charges to be put in. Electric drills are generally used, although hand drills are by no means uncommon. The explosives are placed in the holes and stemmed with incombustible material to prevent shots from blowing out the holes." *Records of the Solid Fuels Administration, National Archives and Records Administration.*

Drill and Shoot

Once the coal was undercut, holes were drilled in the face for explosives. Early on, breast augers (see figure 6) or jack stand drills were used, later electric drills were developed. Jack Miller explained drilling and shooting from the subject perspective of the miner. In their account, as in life, it is impossible to separate the technological division of labor from the alienated social conditions of the contract system:

JM: You see, you done your own drilling. You drilled your own holes with a breast auger. You didn't have any mechanical damn stuff to work with you know, this was all hand, muscle work.

SM: And there was none of this here stuff like now-a-days, electric primers and all that crap you know. You shot with a squib, a needle…

JM: We were blasting the coal down with black powder in those days. We didn't have stick powder those days.

SM: I think they called it 4-F. We bought it in kegs, 25 pound kegs.

Figure 7

In this shot, the miner is making a "dummy" of rolled up newspaper filled with dirt or clay to "stem" the hole and keep the force of the explosion directed toward the coal. *Records of the Solid Fuels Administration, National Archives and Records Administration.*

JM: Come in kernels about that big.

SM: Looked like sheep shit, the kernels did.

JM: We used to save all the Denver Post and roll 'em up on a stick, and hit the end of them on something hard so as to tie the end in and then we'd fill these out of our powder keg…. You'd roll these cartridges, and you'd take this copper needle, had a point on it, sharp point. And you'd push these cartridges to the back of your hole and you'd run your needle in there so you'd run it into the powder. Being copper it wouldn't cause a spark and set the powder off…. Then we had a tamping bar with a slot in it that just rolled right on top of this needle, you see. Then we'd start putting wet clay, throw it in there and we'd tamp this right out to the collar. Right to the collar of the hole. And then you worked your needle out, real easy, so you didn't sluff your hole in, put your squib in there, lit it with a carbide lamp, and run like hell. Sometimes you got away far enough and sometimes you didn't.

SM: Sometimes you didn't.

JM: If it went off what you done, you just fell down and covered your face up like this and that coal would hit you in the back and the rear end and everywhere else you know.…

Figure 8

Here the miner uses a wooden tamping bar to tamp the hole. He is using dyna-mite and electric caps and carefully keeps the wires from getting kinked or lost in the hole. *Records of the Solid Fuels Administration, National Archives and Records Administration.*

I: What's a squib?

SM: It's a little thing about five inches long and it's got powder in it rolled up in paper and its got a little twisty end on it where you light it. Pshoo, it'd go like that and that powder'd fly back into the powder you had back in the hole and touch it off.

JM: We done all our own timbering, laying our own track, everything, we done everything. Drill the holes, blasted the coal down. We got $.76 a ton to load it. You loaded a 100 tons of coal for $76.00….Then they took your powder off, one of those kegs for three bucks.

SM: I think squibs were a penny apiece. Fifty for half a dollar…. In a two week period we never wanted to fall under 100 ton because if you went under 100 ton, by the time they took your wash out—you know after they built the wash houses—and your fuse and the powder and the blacksmith (to sharpen the drills) and all them little commodities you know, why by God you had to get the coal out to cover the expense.

James Diamante, a mine operator from Price, Utah, described the situation when he first went in the mine as a thirteen-year old boy:

JD: It's a wonder we didn't kill ourselves…. take Sears Roebuck catalogues and roll it up on a broomstick… make a shell out of it, load it with black powder and then put a fuse in it, and sometimes you'd have to light 8, 10, 12 holes with a carbide light. The light went out, you've already lit some of them, and you sit there with a striker and the striker wouldn't work, you try to get the matches and the matches were wet, you try to get out of there and the coal was low and you're stumbling all over and you're running into the ribs (walls), you don't know which direction you're going, pretty soon the shot started going off. Oh, it was terrible, I'm telling you.

Between 1901 and 1910 the source of ignition for nearly half (44%) of all coal mine explosions was blasting. Among the most frequent contributing causes was use of black powder and shooting overburdened or overloaded holes (Humphrey, 1960, p. 21). The Winter Quarters mine in Scofield, Utah blew up on May first, 1900 killing 200 men. According to the mine inspector's report: "It was caused by an accidental explosion of black powder or a windy or blown-out shot" (Humphrey, 1960, p. 20).

Figure 9

An early electric drill designed to replace hand drills, jack stand drills and breast augers that all required muscle power. *American Museum of Natural History, Smithsonian Institution.*

Electric drills made it physically less difficult to drill the holes, and presumably speeded up production, but machines introduced new dangers. Consider the differences between figure nine, an apparently rational improvement over muscle powered drills, and the Miller Brothers' description of the hazards that were embedded in each technological advance designed, not by and for the miners, but solely to increase production:

SM: I hear someone hollering, "stop it, stop it, stop it." I was running through the crosscut to see what was happening. Zeke from Lafayette and Welshy is working together drilling some holes, and the drill stuck, you know, and it was just a wheeling, see. And all you could see was a pair of boots going around in a circle … old Welshy's hollering, "stop it, stop it." I ran back and pulled the cord out of the socket. He said, "goddamn it Shine, if it hadn't been for you, I'd have – he said I don't believe I'd have made it."

JM: See, them drills didn't have no release on them. When they get stuck they just kept a whirling.

Figure 10

This shows the scene facing the contract miner when he returned to his place after the shot has gone off. He has to roll an empty car up and load it. Like most photographs of the production process, this one was shot so that there is no visible smoke and dust. *Gift of CF&I Corporation.*

Figure 11

Contract miners spent most of their time loading wooden coal cars by hand. Large pieces were picked up and thrown in by hand. *Gift of National Coal Association.*

Load

Like other photographs of the production process, figures 10 and 11 were shot so that there is no visible smoke and dust. Actually, just as soon as the explosion faded away the miners returned to the face. "And," as Alex Bisulco said: "we had to work in all that smoke and everything, and dust, and you couldn't see in front of you."

    The Miller Brothers echoed this fact: "When we'd blast we'd take our jackets and go in and fan the smoke out so we could get in there and load coal."

SM: Well I've seen it so bad. Now here's a condition. I don't care
    who – its no lie, right? Clayton Coal Company. The conditions
    was so bad, the air, that we had carbide lights and we had to
    set them on the ground to load coal on the floor because if
    you raised your head up with it on your head, it would blow
    your light out.
JM: There wasn't enough oxygen.
SM: There wasn't enough oxygen for the light to burn.

In Cokedale, Frank Wojtylka also told about the hardships of hand-loading with a laugh.

Figure 12

Then smaller lumps were shoveled in to fill up any holes or spaces. *Museum of New Mexico.*

FW: Sometimes you had to work in water up over your knees with a shovel trying to locate where the coal is (laughter). Try that sometime.

Dead Work

Loading the car was by no means the end of the miner's duty. When their "place" was "cleaned-up" they had a great deal of housekeeping to do. The mining process produced waste as well as coal. Rock could not be loaded with the coal. As they loaded the car, miners were expected to separate the rock from the coal and "gob" the rock by building walls, putting it in empty rooms, or otherwise moving it out of the way (see figure 13). Jack Miller expressed the miners' outrage at this:

JM: And if your car went out and they found a chunk of rock, oh, as big as a silver dollar around, and that thick, the first time they fined you fifty cents. The second time, they'd charge you a dollar. The third time–put your tools on the car, you're through. You cleaned that coal for nothing!

Figure 13

On the back of this photo it says "Retake - Show gob in room as well as coal." I never found the "retake" but apparently the photographer was trying to capture an aspect of the process not usually photographed. *Gift of CF&I Corporation.*

There were a number of other elements of the labor process which were not directly productive. Miners had to set timbers to support the roof, "brush down" the floor to make it smooth and level, and lay track. Miners called this "dead work." It was intimately connected to production, but it was "dead work" because it was unpaid labor. Charles Bottinelli summed up the essential relation of the contractor:

CB: You didn't get paid for dead work. You'd go in the mine and you would timber your place and you didn't get paid for that. Course the mining companies would furnish the timber and you would lay your track at no cost to the employer … The thing that you mostly got paid for was that coal that you loaded in the pit cars.

The miners resented every minute spent doing work for which they were not paid. At the same time, dead work was necessary for safety. Setting timbers (see figure 14), for instance, was essential not

Figure 14

In the main haulage way and other common areas special crews put up timbers and cross bars, but in each room the miners were expected to timber their own place with raw materials provided by the company. Miners used saws, axes and sledgehammers to set the timbers and the wedge shaped cap pieces. *Gift of CF&I Corporation.*

only for protecting individual miners from roof falls, but for creating an overall structure to maintain the entire mine in the face of the relentless pressure of the overburden. This kind of carpentry underground was time consuming and difficult. The urge to slough it off and load coal was omnipresent. Despite the obvious importance of dead work for the overall mining operation and the men's individual safety, I found few photographs of dead work beyond a couple showing timbering.

Haul

Almost all mines used mules to bring individual cars from the rooms where they were loaded to assembly points on the main haulage way, and many employed mule teams in the main haulage way as well. Mules were cheap and powerful, they didn't rely on electricity, cause explosions, or require heavy rails. Men and mules shared a common bond laboring together in the dark dangerous environment of the

Figure 15

A mule team on the main haulage way. When I showed this photograph to Victor Bazanele he said it was a fake. He saw immediately that the mules are straining directly beneath the trolley line that signifies an electric haulage system. And indeed, this shot was made in May 1956 just as the Morley mine was closing. This was a gassy mine, and mules were used long after most other mines had given them up. The company photographer drove down and set up to record the vanishing haulage system. *Gift of CF&I Corporation.*
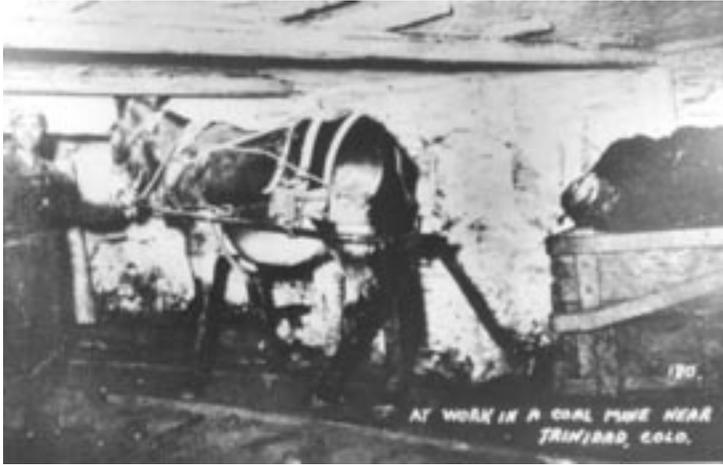
Figure 16

Mule pictures were fairly common in the archives. Postcards like this were frequently purchased by miners and sent back to their families in the old country *State Historical Society of Colorado.*

mines. The driver sat on the bumper of the coal car spending the long day staring at the wrong end of a mule:

> My sweetheart's the mule of the mines,
> I drive her without any lines,
> On the bumper I sit,
> And I chew and I spit,
> All over my sweetheart's behind.
> (Traditional folksong)

Men and mules were locked in a complex love-hate relationship. Miners engaged in mulish labor; mules became as smart as men. Alex Bisulco showed us a group of miners and mules posed in front of the portal. Pointing at the mule he started a story, "me and this other jackass.…"

Over the years the miners used mules as a trope, a narrative device which they employed with telling effect. Evidence for oral history made in common, mule stories involve a double transmogrification worthy of Greek mythology: men became mules, mules became men. A favorite story is that mules could tell when they were being exploited. They could hear the miner hitching on cars, and if they were used to hauling three and you hitched up a fourth, they would

Figure 17

Mule drivers were among the first laborers to be paid a company wage. But wages were low and driving was frequently an "entry-level" job for youngsters. The young boys in this photo exude the sense of style that Tom Somsky eluded to: "… The drivers that used to drive the mules, you know, they had a big lamp – and them drivers would build it up higher and higher, that's what they liked. But there's guys running around in the mine with the top of their hats burned off. The cloth was burned off from the light. Especially the drivers were on the car and the air hitting it and the top of that cap be burned." *Museum of American History, Smithsonian Institution.*

complain, kick and fuss, or sit down on the job. Miners also claimed the mules knew when it was quitting time and would just stop working and head for the barn.

According to the miners, mine mules got the franchise before some of the immigrant miners. In more than one coal camp, corrupt officials listed mules on the voting roles and registered their votes on election day.

Two miners explained how it was in Walsenburg, Colorado:

D: When Jeff Farr ran this town, anybody that say they was a democrat, hell he shoot 'em. There was no Democrats. And when they didn't have enough votes, they took all the names of the mules. Walsen had about thirty-three mules, and they all got a different name. Ideal, the same. If they didn't have

enough votes for the Republicans to win, they put all the names
of the mules down.

JC: They voted the mules.

Alex Bisulco had a little museum of coal mining artifacts. Picking
up a mule whip and laying it over his neck he explained the harsh
facts of the struggle which actually took place between capital and la-
bor through the instrument of mules who were in fact a living tool:

AB: We drivers wore these around our necks like that and if the
mule – If the mule needed whipping, well they sure got it.
Some of us could hit a grasshopper from here to over there
with our popper. … And they made us quit using these after.
They wouldn't let us. It was inhumane and so they made us
quit using it. And all we could use was a sprag (picks up piece
of wood about the size of a ball bat). That's all they let us use
on the mules then. But some of the drivers lose their patience
and they beat them over the head even. We used to have balky

Figure 18

This photo, from Charles Bottinelli's personal collection, shows his brother,
Tealy, in the Monarch mine. Taken in 1927, just before the IWW strike, it is
unusual because it is rare to find an underground shot belonging to miners rather
than the company. It is also interesting that it depicts the self-consciousness of a
work group "1st East Drivers." The hand lettered sign suggests a grouping quite
different from, for instance, a company shot of employees posed around the
portal. *Gift of Charles Bottinelli.*

mules; they'd balk, they'd refuse to work. They was unionized before some of us.

Again and again the old timers explained that a mule was worth more than a man. In those days before workman's compensation a mule had to be purchased while workers were literally free labor. Donald Mitchell described the aftermath of an accident:

DM: Here come the super in a hurry down there: "Any mules killed?" "No." "Any men killed?" And then they put that compensation law, see. And he said this himself, he come down on a day when the trip got away, he said: "Any men killed?" "No." "Any mules?" He said, "It used to be the other way." He said, "We used to have to buy another mule; it cost us $250.00, it didn't cost nothing, we just hired another man." That's what he told us. (Chuckle) Super told us that.

The Amicarella brothers used their account to underscore a certain racism inherent in corporate hiring practices:

CA: If a mule was accidentally killed –
LA: Oh, you got hell.

Figure 19

This shot was taken by Russell Lee in 1946. It shows the weighboss, scale, and the book where he records each miners output. *Records of the Solid Fuels Administration, National Archives and Records Administration.*

CA: You got hell, and they closed that end of the mine down.
LA: Let a man get hurt, they'd say, "Oh well, they'll hire another
   Mexican."
CA: Yeah. That's right.
LA: That's just the way it happens, fellows.
CA: There was no respect given at all.

My point here is simple. The transmogrification of men into mules
and mules into men was indeed accomplished by the invisible hand
of the market. None of the complex social relationships between peo-
ple that took place by and through mules could be photographed.

Weigh

Figure 19 shows that most crucial step in the contract mining system
– weighing the coal. The contract system offered special opportuni-
ties for exploitation and corruption. Miners frequently accused the
company of setting the scales to subtract a few hundred pounds from
each car that was weighed. The extraction of surplus labor value,
a critical function of capitalism that is generally veiled to the wage
laborer, was directly visible to coal miners. In a quiet voice, tense
with anger, Claude Amicarella described the system of exploitation
that robbed him of his labor:

CA: The idea was to get as much coal on them cars as you pos-
   sibly could. And when that car hit the scales, say it went to
   5,000 pounds, right? Well they give you 4,800 or when 5,200
   they give you five …. See they used to pay for the operating
   of their damn mine off the sweat of the miners.

One could never perceive the alienation from the product of Claude's
labor in figures 20 and 21, shots of well chunked-up cars sitting on
the scales.

Accidents and Explosions

Accidental death was so common in the mines that it must be
counted as part of the production process. Photographs 22 and 23 are
rare images taken at the scene, not of a major mine explosion, but of
a common everyday accident. Under the contract system, responsibil-
ity for safety fell on the shoulders of each individual miner. Because
the men were paid only for the coal that they produced, there was

Figure 20

An instructive series of shots made at the Cameron mine near Walsenburg Colorado during the 1920's. A car is on the scales. The hanging chain is to catch a hook on the car to open gates at the bottom, dropping the coal down into the tipple. Empty cars on the left will gravity feed back into the mine. In the comments written on the back of the prints we glimpse an attempt to manufacture an image for corporate consumption: written in pencil: "Retake - leave out empty car. Man throwing check in chute." *Gift of CF&I Corporation.*

Figure 21

This is the second attempt. Here we see a well chunked-up car. The chute, where the tipple man throws the miner's check, is more clearly visible above his head. This take has written on the back: "OK if place cleaned up" Apparently the unknown consumer of the image was still unsatisfied because of the coal waste along the tracks in the foreground. *Gift of CF&I Corporation.*

Figure 22

Miners at scene of an accident, Delagua, Colorado (N.D.) F24837. *Denver Public Library.*

Figure 23

Mine Accident. "Delagua, Colorado Oct. 1901." F24835. *Denver Public Library.*

little financial incentive to make safety-related improvements. No law held coal operators responsible for safety beyond securing the haulage-way roof and track and providing sufficient material for the miners to timber their places.

There were no insurance policies. Broken bodies were brought up at the end of the shift and delivered to the widow's house. Victor Bazanelle described an even more callous possibility:

VB: I remember two Bulgarians. I went across two full rooms and saw them. They were under three feet of sandstone. Just the feet was hanging out. One pair of feet. And they put three jacks, three ten ton jacks under and we raised it a few feet and took them out. Just like a newspaper. Flat. … Two fellas. They threw them in the coke ovens, they had a bunch of black smoke and that's all.

In the oral histories, the miners brought up death by accident and disaster without prompting. Bill Lloyd, for instance, offered the following story:

BL: Well there was two killed at Boncarbo while I was there, I was superintendent there and two men was killed, see. One was a timber man and the other was a nipper, see. This timber man had no business getting killed, see. He went in and pulled the timber out of the place, you see, and standing around watching like a big dummy, you know. And when the darn place started to come in, then he started to run. And when a big rock come down a crosscut up there and slid across and hit him in the side of the head and broke his neck, see, as he went to turn, see. It hit him – you know, when he went to turn, with that force you see, it broke his neck. Before he died he had this wad of chewing tobacco in his mouth and the fellows was right there and he said, "Take this chew of tobacco out of my mouth." So they take this chew of tobacco out of his mouth and that was it, see? …

The miners' accounts raise additional important issues about the use of photographs in historic reconstruction. Those of us who still would use photographs must make the readers and viewers endlessly aware of how skimpy, biased, and incomplete is the photographic record, and how gaps and elisions overshadow the photographs we do have. For example, despite the fact that one might hypothesize

that photographs of accident sites and aftermaths were made for company documentation, legal, insurance, or safety education purposes, none were found in any corporate files. If such photographs were made, they were purged before files became available to the public. The two shots I show here are the only ones I ever found and there is no data as to who made the images or why.

While accidents were hidden from the photographer's lens, Minnie Clark, a miner's wife and miner's daughter, pointed out the fact that accidents were seen by everyone in the town:

MC: We lived right by the mine. We could see when they'd bring them out. If they were killed in the mine they'd wrap them up in white canvas and bring them out of the mine. We could see all that. We wasn't a block away from the mine."

In the miners' accounts the subjects describe what they "saw." When we asked miners if they had photographs, many reacted like Frank Harenberg who actually equated taking photographs with the work of the historian:

FH: I never once owned a Kodak. Ain't that awful? I see that now, what a big mistake I made; I didn't own a Kodak. And I

Figure 24

Victor American # 3 Mine, Delagua, Colorado. Explosion Nov. 8, 1910. 79 Killed Dust explosion ignited by a fire in main entry. three men on outside killed by flying debris. (Humphrey, 1960: 31). *State Historical Society of Colorado.*

could have taken some remarkable pictures and pictures that'd really be interesting today. And I'm sorry that I'm not much of a historian.

More common were above ground photographs, like figure 24 shown here, of the aftermaths of the all too frequent mine disasters. Figure documentation of explosions, however, was also curiously spotty, perhaps revealing the power of large corporations to control access to isolated company towns. For example, there were two devastating explosions in the Phelps Dodge mines of Dawson, New Mexico. Dawson, located in the sparsely populated Northeast corner of the state, was the largest company town in the West. The number two mine blew up in 1913 and killed 263; the number one mine exploded ten years later killing 120 more miners. Of all this carnage, there is a single photograph showing coffins of the victims of the 1913 explosion. This figure shows the scene outside the Victor American number three mine, Delagua, Colorado. Seventy-nine were killed in a dust explosion ignited by a fire in the main entry. Three men on the outside were killed by flying debris (for accident descriptions and statistics see Humphrey 1960).

Figure 25

Noon hour in the Ewen Breaker, Pennsylvania Coal Co. Location: South Pittston Pennsylvania. *Library of Congress LC-DIG-nclc-01134 1911 January. Hine, Lewis Wickes, 1874–1940, photographer.*

Isn't it still possible that documentary photographers can capture alienation and exploitation? Figure 25 is one of the best known coal mining pictures of all time - a child labor photographs from Lewis Hine's 1911 "breaker boys" series. These powerful images *were* used to challenge accepted practices and change laws. Were not these photographs truly negations of the functional and operational; thus, were they not two-dimensional and transcendent concepts? On the surface, photos of children trapping or sorting coal in the breaker chutes seem to be *prima fascia* evidence that it is possible to take photographs of the process of exploitation. Hine certainly intended his photographs to do precisely this. In articles in *The Survey*, posters, and lantern slide shows, he exhibited his photographs contextualized with words and montage. He intended the images to spark a social movement, to create their negation – a world without child labor.

Figure 26 was taken at the Gray Creek Mine near Trinidad, Colorado and was contemporary with Lewis Hine's breaker boys. The Gray Creek image was not made for some critical purpose. It was merely a familiar type of crew shot that included young miners. When these images were made, it was not only legal to employ children, it was a normal and accepted part of mining and had been this way forever.[1] There was pride and poetry in his voice as Bill Lloyd remembered:

Figure 26

Noon hour in the Ewen Breaker, Pennsylvania Coal Co. Location: South Pittston Pennsylvania. *Library of Congress LC-DIG-nclc-01134 1911 January. Hine, Lewis Wickes, 1874–1940, photographer.*

BL: That was where they started in the mines,
  When their dinner bucket drug the ground,
  See.
  And that's the way mine done,
  See.

This illustrates the one-dimensional nature of *all* photographic images. Photographs cannot capture processes like exploitation because the negative potential does not adhere to the image. It inheres in the words and concepts accompanying the image as caption, in Hine's cry "this should not be!" But the negation was forged, not by the image but as a form of *praxis* in the context in which the images were viewed. It was Hine's audience: The National Child Labor Committee, readers of *The Survey*, members of the progressive movement, and so on that constituted a *praxis*. Viewers acted, passed laws and demanded reform. Without those readers, photographic meaning collapsed. Eventually, even captioned photographic texts fall apart. Without the audience *praxis* to sustain them, the meanings slip away.

In 1993, the photograph of the breaker boys reproduced here was purchased as a postcard in a college bookstore. A photograph made to move people to act, became the site of aberrant (or abhorrent) readings by a disengaged audience waiting in line at the cash register. Hine's outraged image had become an aesthetic or nostalgic commodity, an artful example of photographic composition, an occasion to congratulate ourselves on progress, or simply a moment of pathos next to the Hallmark cards. In the college bookstore, done up in sepia, for sale for 50 cents, the image has no power and no ability to motivate action. It merely obscures the blighted lives and angry stares of today's youth unemployed in the inner city or hungrily flipping burgers in the suburbs.

The Experts

NAME	DATE	INTERVIEW LOCATION
Amicarella, Claude	02/21/78	Lafayette, Co.
Amicarella, Lawrence	07/30/75	Lafayette, Co.
Bazanelle, Victor	01/30/76	Ludlow, Co.
Bisulco, Alex	06/27/78	Aguilar, Co.
Bottinelli, Charles R.	12/09/83	Longmont, Co.

Bruger, Louis	08/10/76	Lafayette, Co.
Cielinski, Walt	05/ /76	Boulder, Co.
Clark, Minnie	07/31/75	Longmont, Co.
Diamanti, James	04/24/78	Price, Ut.
Harenberg, Frank	05/21/78	Cokedale, Co.
Lloyd, Bill	05/18/78	Florence, Co.
Mathias, Henry	07/02/75	Lafayette, Co.
Miller, Jack	07/30/76	Erie, Co.
Miller, Shine	07/30/76	Erie, Co.
Mitchell, Donald	02/05/78	Walsenberg, Co.
Somsky, Tom	02/02/84	Erie, Co.
Wojtylka, Frank	05/23/78	Cokedale, Co.

Notes

An earlier version of this paper, without photographs, appeared as "Picturing Labor: Photographs of the Coal Mine Labor Process" Conference proceedings *Work, Difference and Social Change: New Perspectives on Work and Workers Two Decades after Braverman's Labor and Monopoly Capital.* State University of New York at Binghamton. 1998 pp. 265–277.

1. In 1845 Engels wrote of the English coal mines: "For watching the doors the smallest children are usually employed, who thus pass twelve hours daily, in the dark, alone, sitting usually in damp passages without even having work enough to save them from the stupefying, brutalizing tedium of doing nothing." From "The Mining Proletariat" in *The Condition of the Working Class in England. Karl Marx Frederick Engels Collected Works* Vol 4 (International Publishers, New York, 1975:533).

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