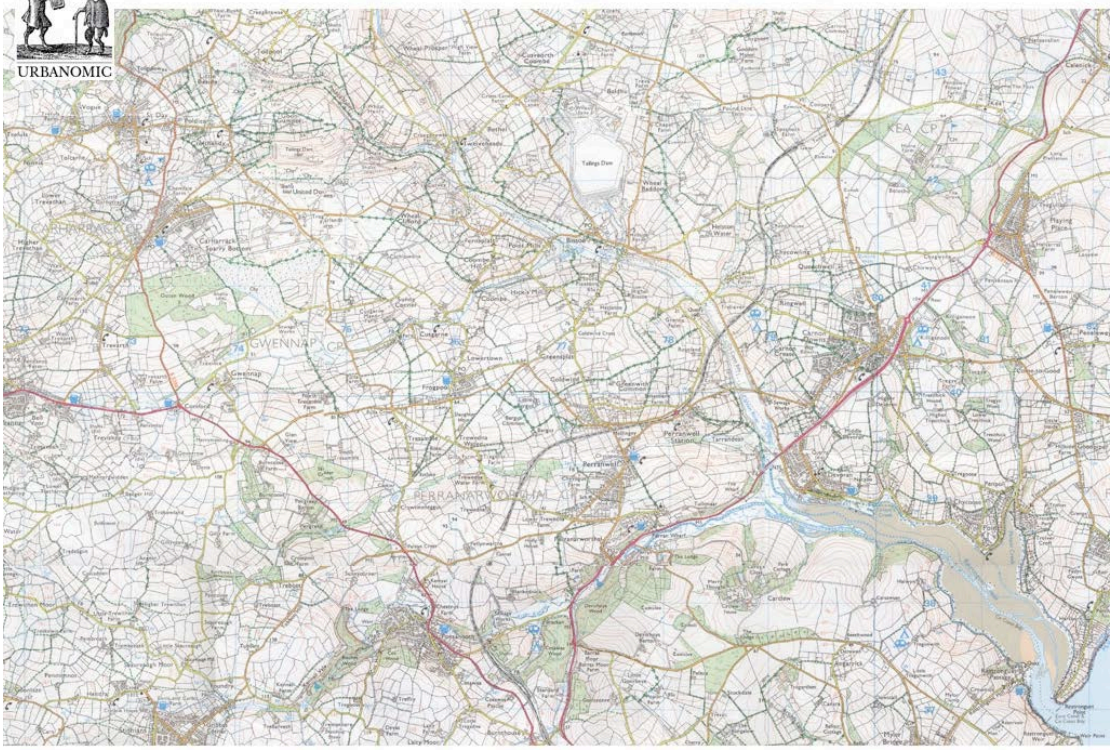
UNDERGROUND ADVENTURE:
From Mines to Signs

Robin Mackay

I would like to begin by setting this discussion in the historical context of its predecessor, the Falmouth Convention in 2010.

This was the first time we experimented with the model of the ‘field trip’, one of which was conducted by Urbanomic, together with FieldClub.



Our trip explored the Gwennap area between Redruth, Truro and Falmouth, where a great deal of industrial mining activity was concentrated throughout the 18th and 19th centuries.

At the time referred to as the richest square mile in the world, it is interesting to reflect on why it is now one of the poorest areas in Europe - hence (along with all of Cornwall) a recipient of European Redevelopment Funding. So this is a question already of extraction in physical and economical and indeed a human sense, something I'll elaborate on later.

But what is this landscape?

We wanted to look below the superficial layer of the rugged and beautiful natural landscape that represents Cornwall to most tourists: how can we understand the production of that landscape as being the result of artificial processes of industrial extraction.

The Engine House, now become a picturesque emblem of Cornwall. We rarely think about the fact that it is a relic of Cornwall's implication in a radical and violent process of industrialisation, a century-long intensification of extraction technologies.

In our imagination, the engine house has become merged with the natural landscape. In a sense this is appropriate, but a materialist approach is necessary to appreciate in quite what way it is appropriate - not just aesthetic sense.

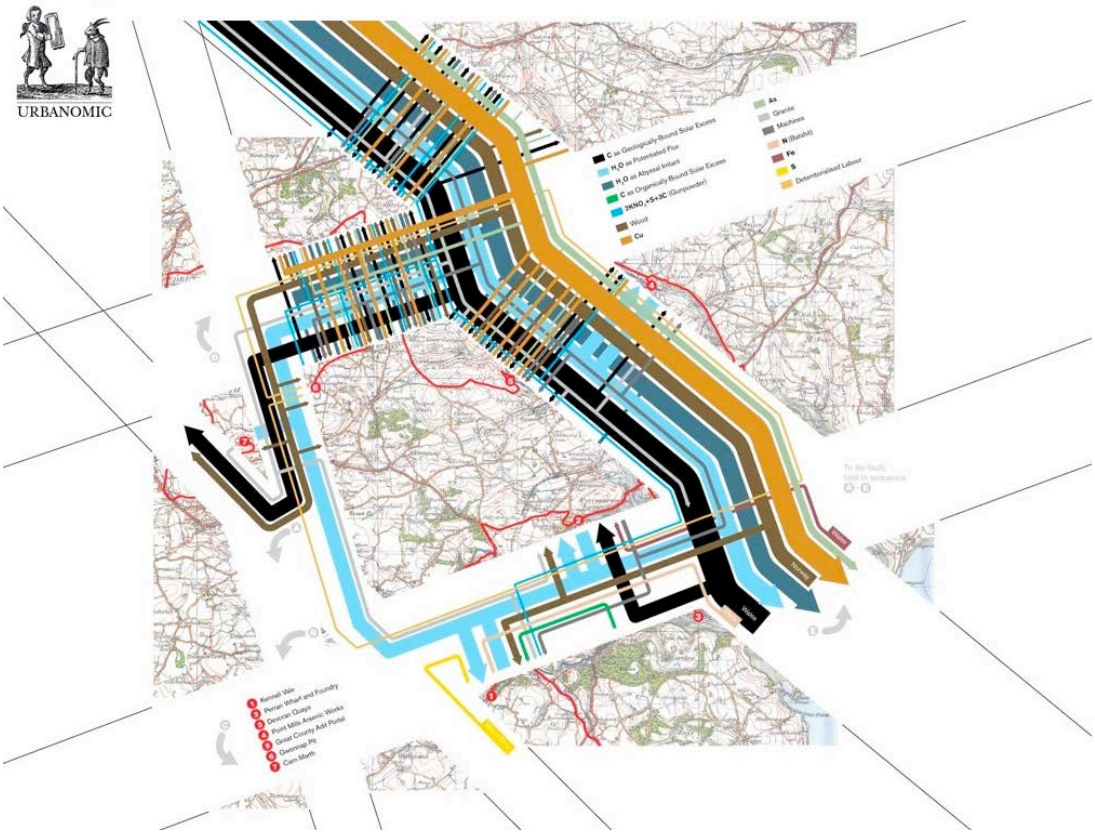
What struck us in researching for the Falmouth Convention tour was how tin and copper mining in Cornwall can't be seen in isolation: it gave rise to a very complex system involving a globalised commercial trade and the extraction of many secondary products – stops on the tour included the works at Bissoe

– where arsenic was extracted from mine waste, and the once-busy port of Devoran

– now dormant, where wood came in from Norway to build mine props, coal from Wales to

fire the engines, tin and copper went out in huge quantities, and so on. So this was a complex interconnected system.

The fault-map that we produced for this trip. literalises the metaphor of ‘unfolding’ the landscape to reveal the complex of natural material flows and manmade processes that remade it during the time of industrialisation. In brief, then, what we wanted to bring to light is not so much a picturesque aesthetic natural landscape, as the barely-cooled remains of a massive-scale geo-chemistry experiment.



The theme of the Falmouth Convention was to think the relation between the local and the global. We tried to take this to an extreme, by understanding how this very particular episode

in industrial history – the Cornish model – related to geological processes, and to the chemical formation of the earth. In particular, we spoke about the relationship between the depths of the earth and water – in particular how the removal of groundwater was one of the primary drivers for the development of new mining technologies, enabling them, to go deeper; and thus for the intensification and acceleration of the extraction process. (further details of the Hydroplutonic Kernow tour can be found at www.urbanomic.com).

URBANOMIC

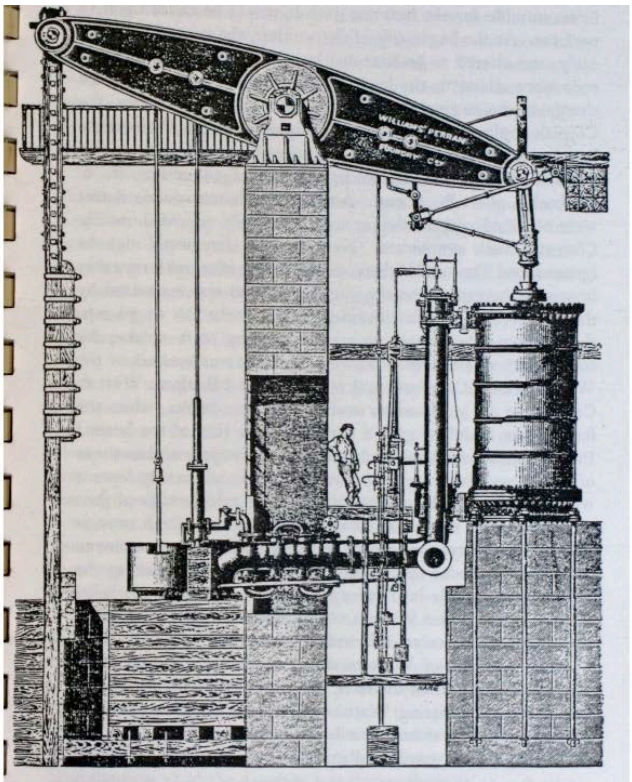


Fig. 18. Taylor's Cornish engine on the United Mines, 1840.
From the Perran Foundry Catalogue, 1868.

So, this first investigation aimed to explore how the development of industrialisation was determined, in the last instance, by the way in which since the very formation of the earth, materials had been laid down and the terrestrial surface and depths have been shaped by natural proceeses, which were then supplememnted and complicated by the actions of industrial man.

I would like to position what we will do today in relation to this first project: This first project was if you like a vertical view, through deep time, for one local process of extraction –as suggested by the cover of the map.

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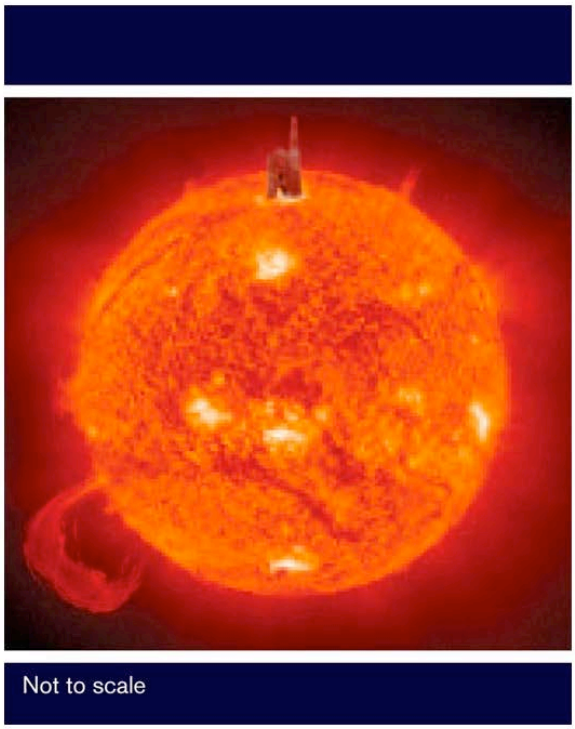
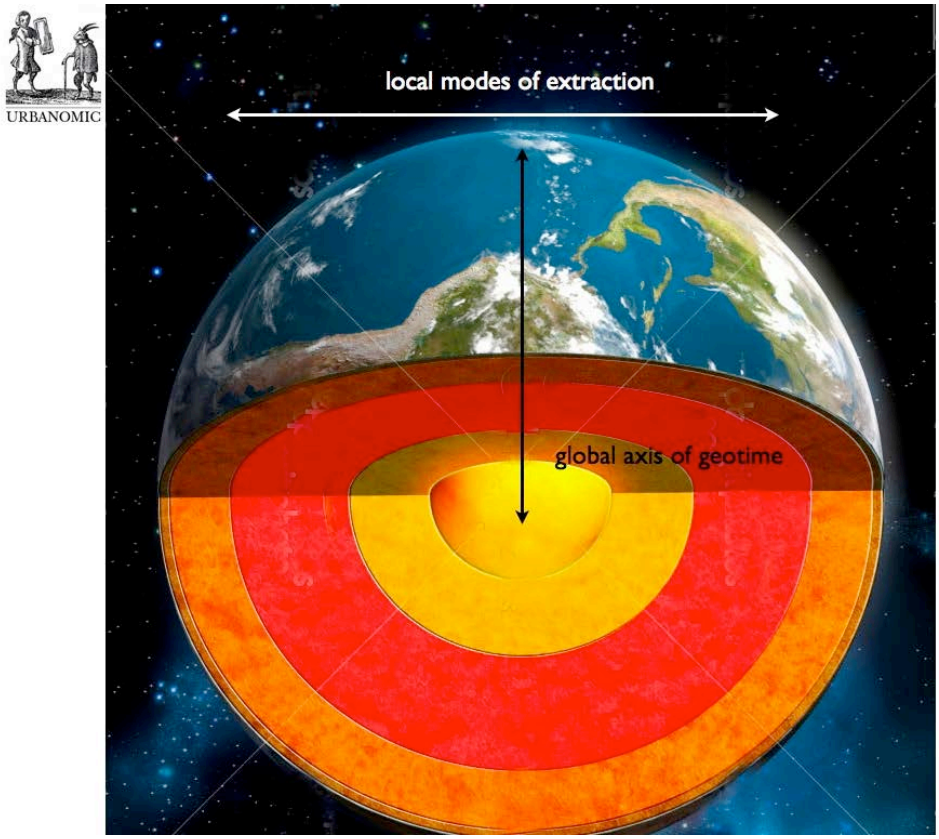


Today what I would like to do is to move horizontally, to look at various *other* models of extraction on the surface of the earth, and to ask whether it's possible to isolate a *general logic* of extraction that is common to them all.



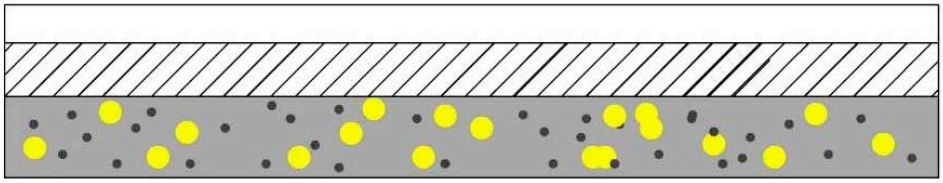
In the spirit of the Penzance Convention, this requires an interdisciplinary approach. So, in this interdisciplinary spirit, and to make a first test of just how general this logic of extraction is, I'd like to begin with a quote from a journal I am sure many of you already subscribe to: *Companion Animal*, the bible of veterinary surgeons.

> *Complications are a regular feature of extraction. While careful, correct technique minimizes these, it is important to be aware of the potential damage types, their avoidance and subsequent treatment.*
>
> A. J. Smithson, 'Oral Surgery Part 4: Extraction Complications', *Companion Animal* 12:4 (May 2007):74-81, p74.

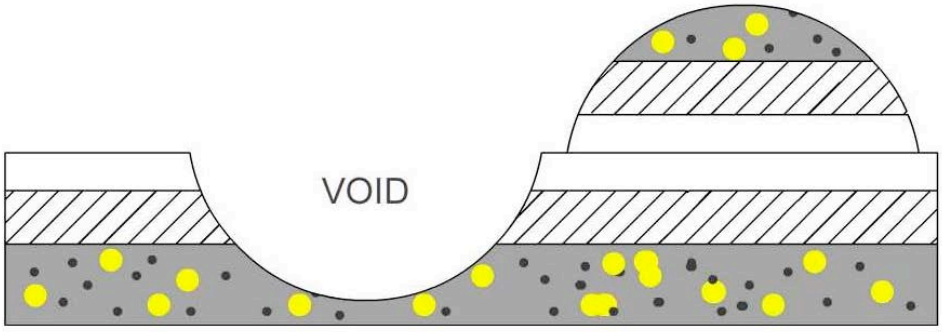
This is quite exact, when applied to all the various modes of extraction carried out by humans on this planet.

Because what is characteristic of humans, of course, is that we *do* complicate things. We don't carefully unfold the earth and fold it back how it was. In fact, we make a mess. There are no 'careful, correct techniques'. Extraction is an irreversible process. In fact, we can call it a kind of ongoing *encryption*. If the earth is a kind of record, a material record of its own history laid down layer by layer – and this contention is of course the basis of all geology –, then what humans tend to do is to corrupt and reformat this filesystem. An encryption that our descendents will find it very difficult if not impossible to break.

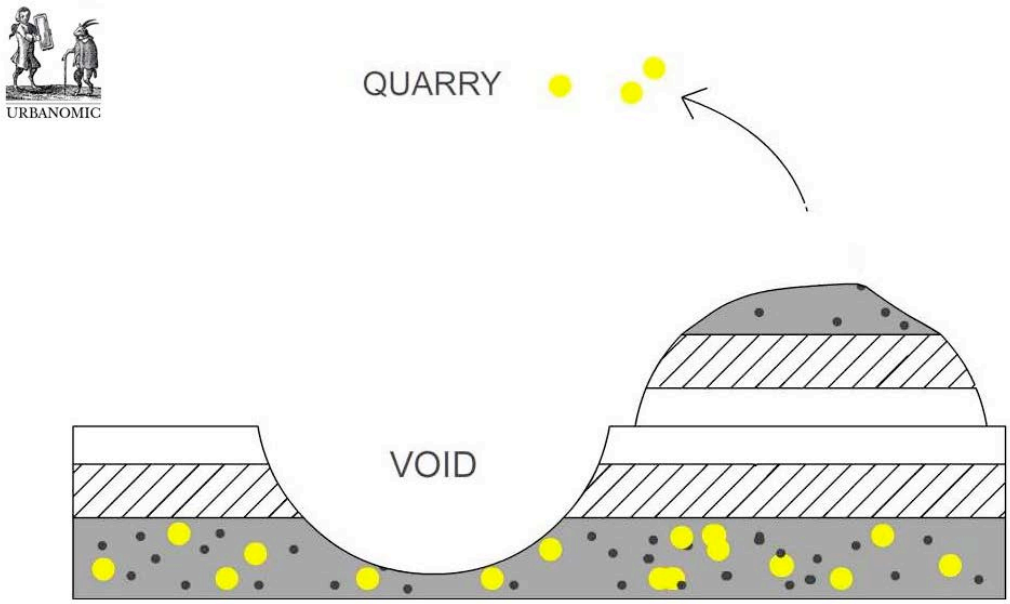
With this in mind, let's look at the basic components of extraction. To do so I'd like to stay with our local model of mining, but keeping in mind that, as we will see do doubt this afternoon, various other forms of extraction will differ in various ways from this basic model. This is the entire interest of what we hope to do today.



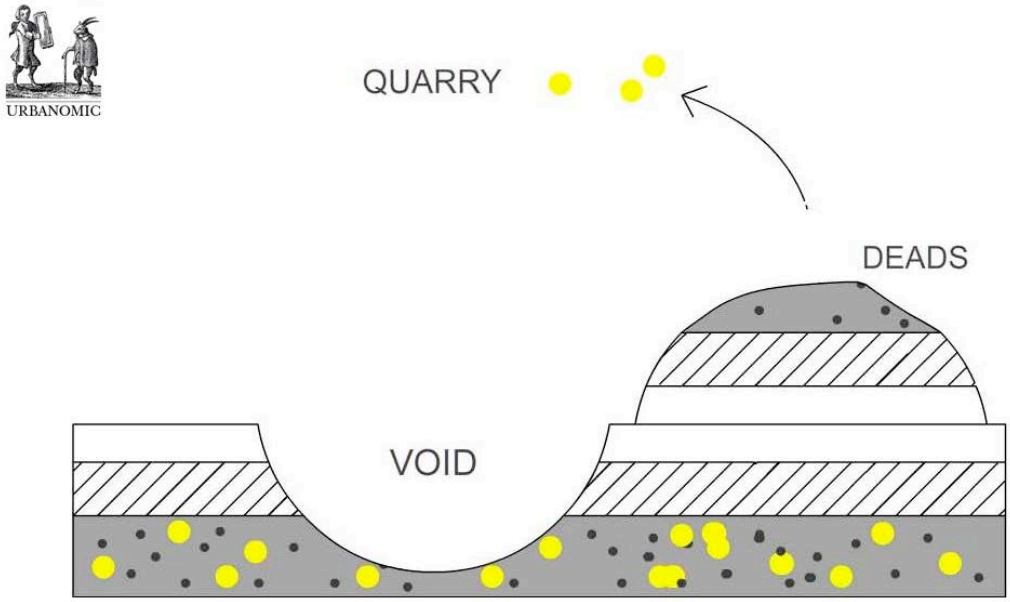
It involves three components:



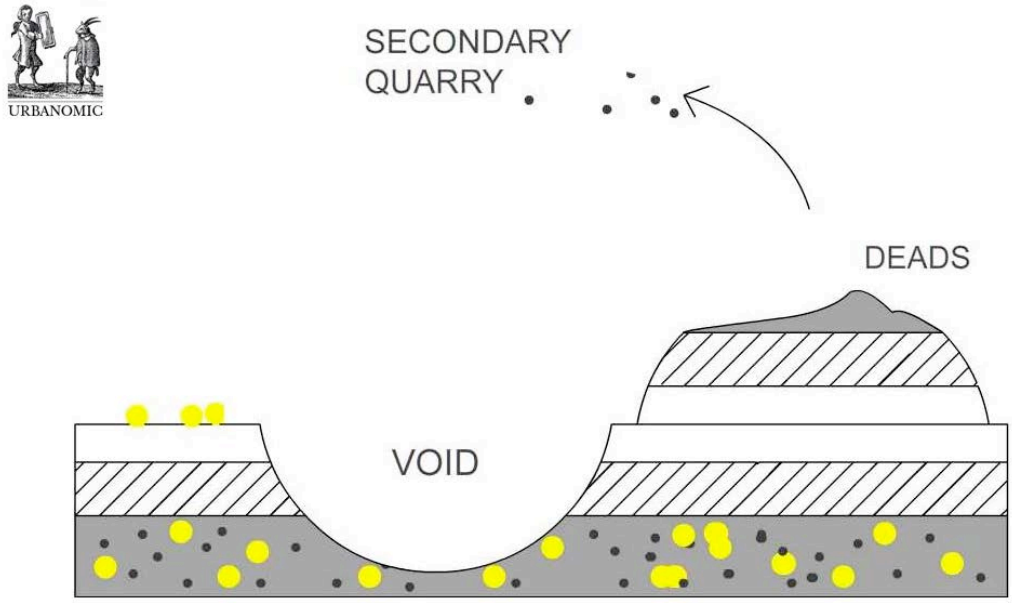
Firstly, a *void*, the empty complement of what has been extracted.



Secondly, the *quarry* - the substance that is sought after, whatever it may be.

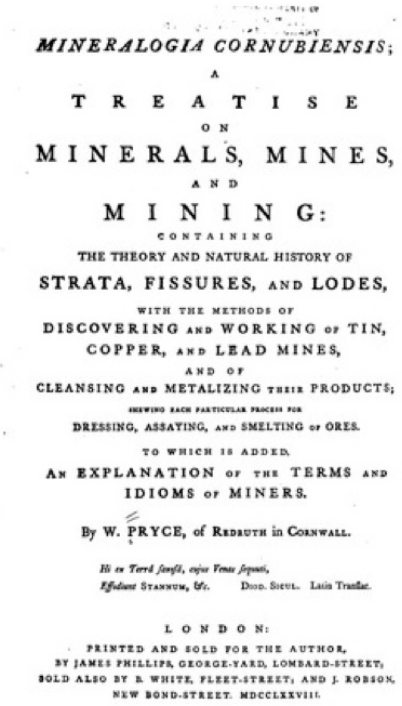


And thirdly, what the extractive industries call *slag*, or what cornish miners call *deads*: the heap of waste that's left after the quarry has been extracted and refined.



Now as I mentioned in relation to the Falmouth trip, following the primary extraction, of course it makes economic sense to develop secondary industries to utilise what is left - to make lemons into lemonade, or deads into quarry.

An interesting aside here on the matter of mundic. Mundic was a substance often found by minders alongside metals, and which was an awful lot of trouble to get rid of; in Pryce's Mineralogia Cornubiensis, however, he also notes that since it occurs along with metals (it's produced by the same processes), a saying among miners has it that 'mundic commonly rides a good horse'.



MINERALOGIA CORNUBIENSIS;

A

TREATISE

ON

MINERALS, MINES,

AND

MINING:

CONTAINING

THE THEORY AND NATURAL HISTORY OF

STRATA, FISSURES, AND LODES,

WITH THE METHODS OF

DISCOVERING AND WORKING OF TIN,

COPPER, AND LEAD MINES,

AND OF

CLEANSING AND METALIZING THEIR PRODUCTS;

SHEWING EACH PARTICULAR PROCESS FOR

DRESSING, ASSAYING, AND SMELTING OF ORES.

TO WHICH IS ADDED,

AN EXPLANATION OF THE TERMS AND

IDIOMS OF MINERS.

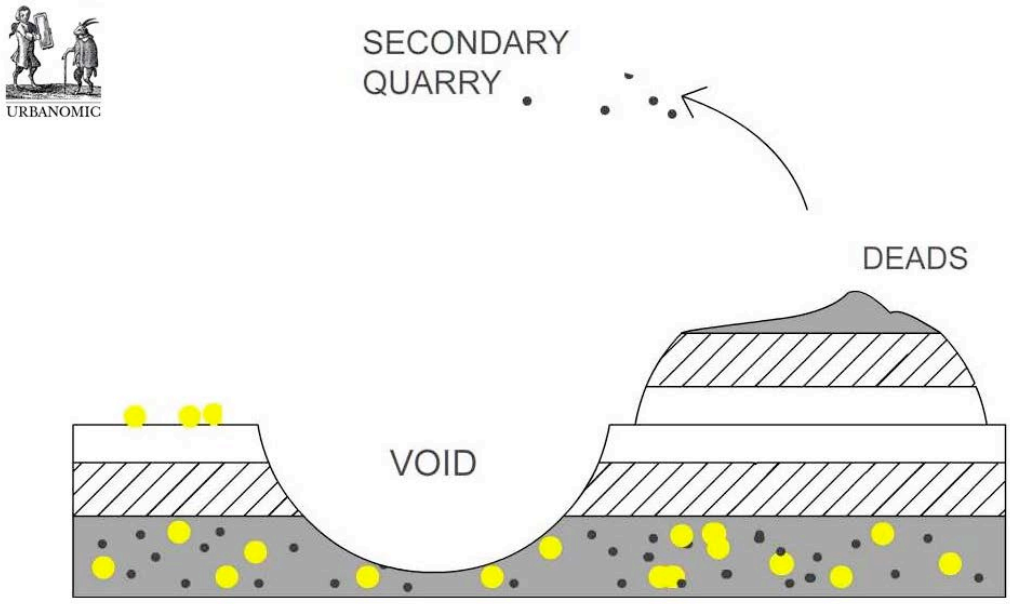
By W. PRYCE, of REDRUTH in CORNWALL.

Ut ex Terrâ foveâ, cujus Venas sequuti,
Effodiunt STANNUM, *&c.* DIOD. SICUL. Latin Translat.

LONDON:

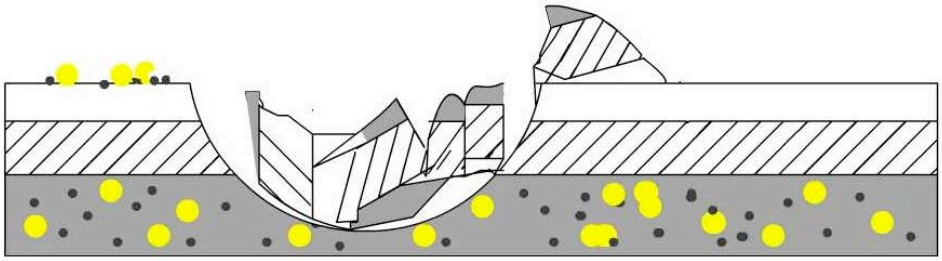
PRINTED AND SOLD FOR THE AUTHOR,
BY JAMES PHILLIPS, GEORGE-YARD, LOMBARD-STREET;
SOLD ALSO BY B. WHITE, FLEET-STREET; AND J. ROBSON,
NEW BOND-STREET. MDCCLXXVIII.

[*] [MUNDIC: waste -> useful -> mundic blocks]



So, as we know, ultimately then whatever is left goes more or less back to where it came from, but in a different order. And later on, no doubt, the quarry itself, manufactured into new

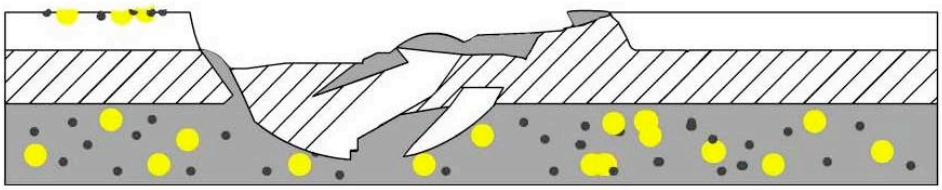
objects, also ends up discarded and returned to the earth. So it's in this sense that humankind becomes a kind of geological force, reprocessing and churning the planet.



Shifting materials both in depth and across the surface, man lives not only in his contemporaneous time, but enters geological time. We corrupt the file-system in a way whose result is not dissilimar to a geoliogical fault.

URBANOMIC

Complication
Folding
Encryption



URBANOMIC

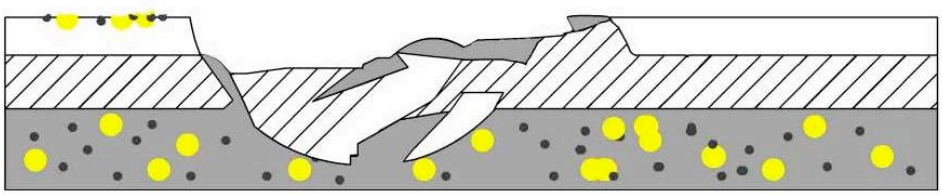
What you see here is the typical blasted landscape left behind by cornish mining.

As an incidental aside, I want to show you a weird and intriguing example of the kind of irreversibility and the kind of twisted material processes that occur when the process of extraction continues and is ramified.

Now, as you may know, the price of copper has been rising. The suggestion has even been made recently that it may even become economical once more to reopen Cornish mines .

Now, Across the road from this particular ex-mine, near St. Day, is a scrap metal merchants.

– and what you see here are the plastic sheaths of copper wires that have been stripped off and discarded, so that the copper can be sold for scrap. So, among the mineshafts, the voids and the deads, heaped on top of them , here are the remains of the products manufactured from the quarry originally brought to the surface here, a kind of twisted return to the source.



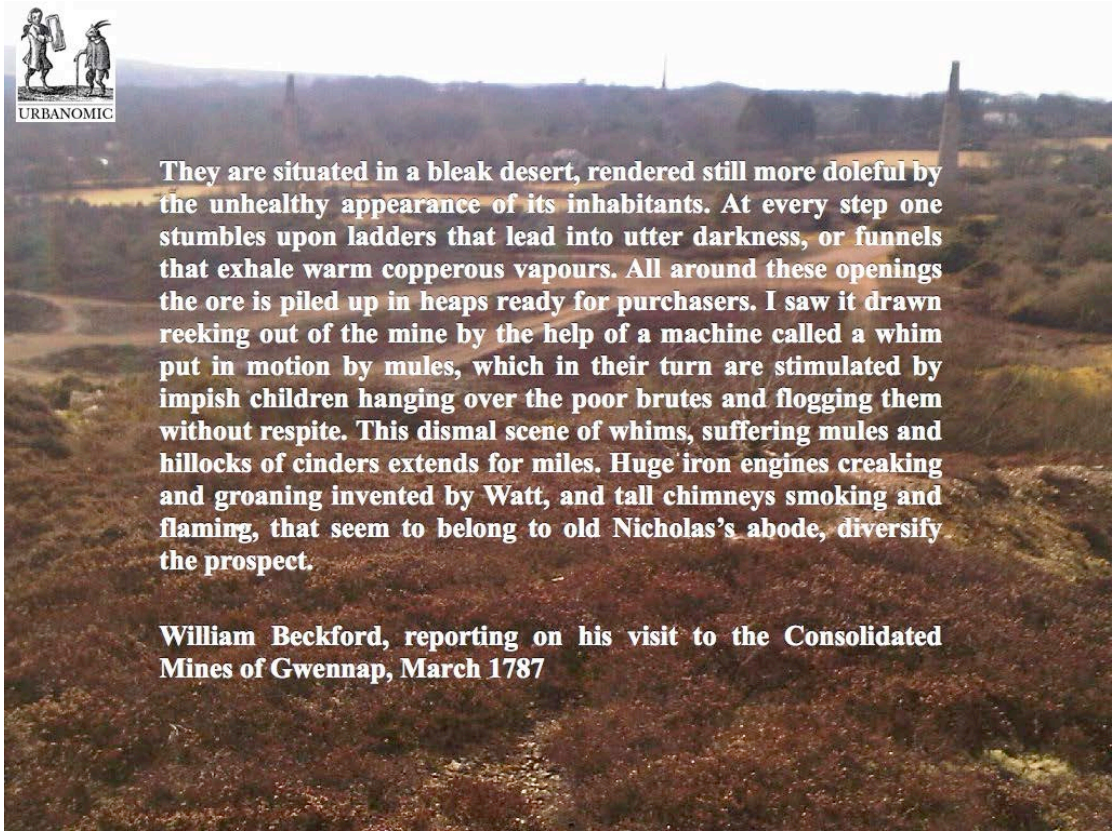
Now, I would like to address a second, important point: this twisted process of extraction is not just a physical process, a process enacted *upon* materials *by* humans.

The development of *capitalism* is the condition for large-scale extraction. It\s the concentration of capital, and the concomitant production of a dispossessed labour-force, that makes possible extraction on an ever-greater scale. Therefore, an extraction also takes place with regard to humans.

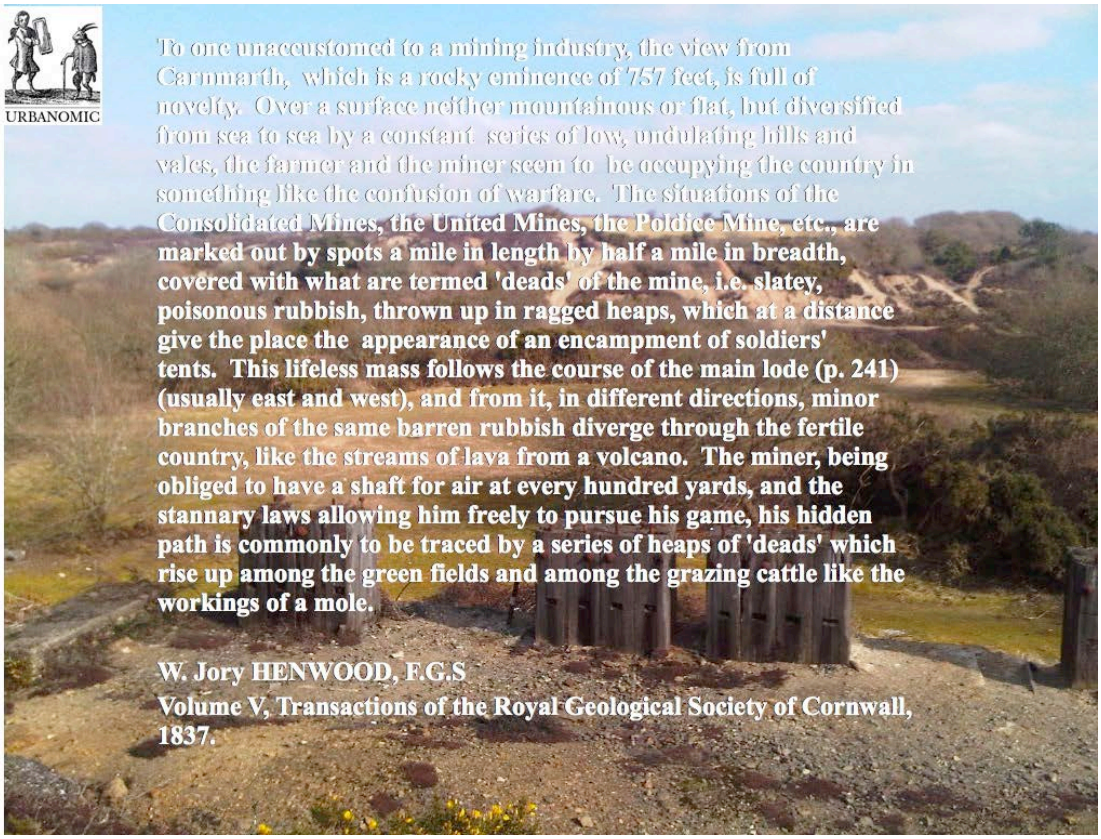
At the same time as reformatting the earth, using the hidden deposits of a pre-human past, industrial development also reinvents and reprocesses *people*, using them as a resource, breaking traditional social bonds and creating new forms of social life. This certainly happened in Cornwall. Methodism, we could say, is a cult whose function was precisely to rebind the communities that were taken apart by this new force that tore through the landscape.

So, when we realise that the landscape of Cornwall is the barely-cooled remains of a massive geochemical experiment, an *artificialisation* of the earth, we should also realise that the economic and social conditions of Cornwall today are in large part the result of an extraction and a voiding of people.

When we were researching our tour in 2010 we came across this remarkable report by the early Gothic novelist William Beckford on his visit to Cornwall in 1787, which I think is one of the greatest evocations of this hidden history that lies beneath the landscape.



50 years later, here, a geologist reports, in equally gothic terms, the abrupt discontinuity that made industrial workers aliens to their rural fellows:



It's interesting that these reports speak not only of an anthropic *vulcanism*, but also of a *state of war* reigning over this infernal scene. Because, since ancient times, the extraction of metals has been associated with war, and mining has been spoken of as a sort of transgression against the divine order: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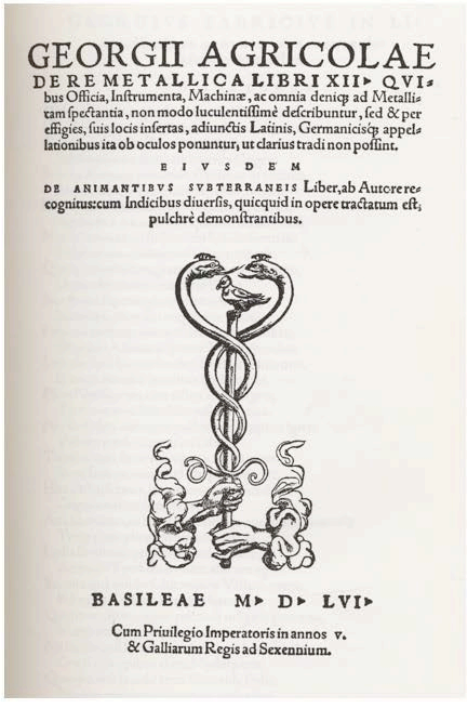

GEORGII AGRICOLAE
DE RE METALLICA LIBRI XII▸ QVIbus Officia, Instrumenta, Machinæ, ac omnia denique ad Metallicam spectantia, non modo luculentissimè describuntur, sed & per effigies, suis locis insertas, adiunctis Latinis, Germanicisq; appellationibus ita ob oculos ponuntur, ut clarius tradi non possint.
EIVSDEM
DE ANIMANTIBVS SVBTERRANEIS Liber, ab Autore recognitus: cum Indicibus diuersis, quicquid in opere tractatum est, pulchrè demonstrantibus.
BASILEAE M▸ D▸ LVI▸
Cum Priuilegio Imperatoris in annos v.
& Galliarum Regis ad Sexennium.

In his *De Re Metallica* of 1556, Agricola cites the following:


URBANOMIC

> *The earth does not conceal and remove from our eyes those things which are useful and necessary to mankind, but on the contrary, like a beneficent and kindly mother she yields in large abundance from her bounty and brings into the light of day the herbs, vegetables, grains, and fruits, and the trees. The minerals on the other hand she buries far beneath in the depth of the ground; therefore, they should not be sought.*
>
> Xenophon

and from Ovid;

And not only was the rich soil required to furnish corn and due sustenance, but men even descended into the entrails of the earth, and they dug up riches, which the earth had removed to the Stygian shades. Then destructive iron came forth, and gold, more destructive than iron; then war came forth

Ovid

To which we can add Pliny's verdict:

For it is upon her surface, in fact, that she has presented us with these substances, equally with the cereals, bounteous and ever ready, as she is, in supplying us with all things for our benefit! It is what is concealed from our view, what is sunk far beneath her surface, objects, in fact, of no rapid formation, that urge us to our ruin, that send us to the very depths of hell. As the mind ranges in vague speculation, let us only consider, proceeding through all ages, as these operations are, when will be the end of thus exhausting the earth, and to what point will avarice finally penetrate! How innocent, how happy, how truly delightful even would life be, if we were to desire nothing but what is to be found upon the face of the earth; in a word, nothing but what is provided ready to our hands!

Pliny the Elder

These warnings, which contain uncanny anticipations of contemporary ecological discourse, bring into play the question of the proper nature of the human: does the true nature of man (or the true will of god for him) consist in a piety and compliance to what is spontaneously given and visible, or is what is proper to the human an enterprising extraction that will involve him in remaking not only the earth, but also himself.

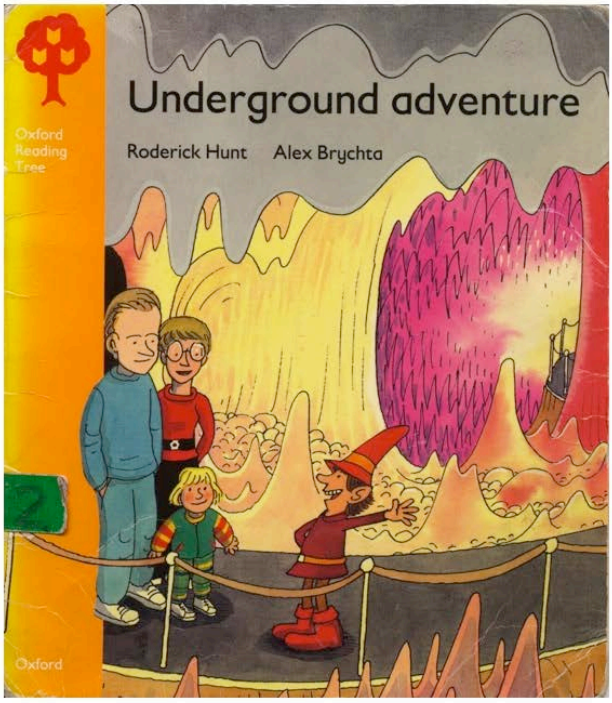
In any case, from the advent of the Industrial Revolution, humans put aside these ancient apprehensions, and drilled deeper and deeper into the strata of the Earth, extracting mineral wealth and leaving voids in their wake. It is difficult now to think of the human as anything other than *homo extractus*.

With this association of extraction and conflict in mind, let's finally return to the human aspect of extraction.

Capitalism can be understood as a machine that uses problems, disequilibria, as fuel for the production of new surpluses. So it tends to return over and over again to the problems it has created - to the deads and to the voids – material and human – that it's left behind, with new technologies and from new perspectives, to try to extract more and otherwise.

For communities reorganised around the exploitation of labour-power by Capital, the transformation of the land is doubled by a legacy of social void and residue once the primary extraction process is complete (ie no longer profitable and moves on). But it seems that eventually, a new process of extraction follows.

Now, very little has been written about the logic of this new process of extraction. However, luckily, another member of my family, in his research, came across a volume that speaks about it with great precision.



I think this text is particularly germane with respect to Cornwall, where there are now more themeparks, art galleries and coffeeshops than there ever were mines.

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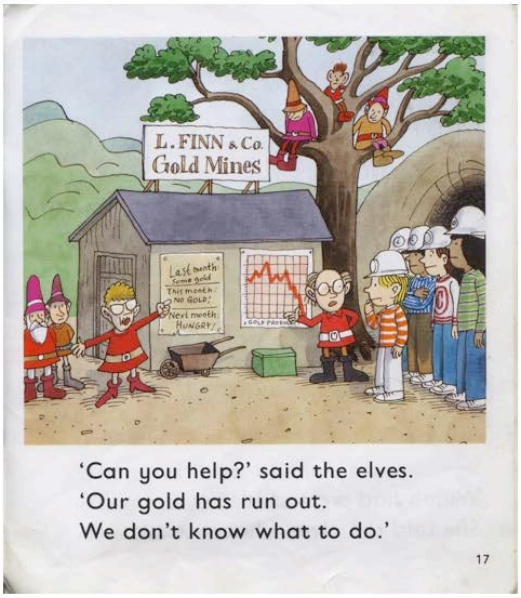
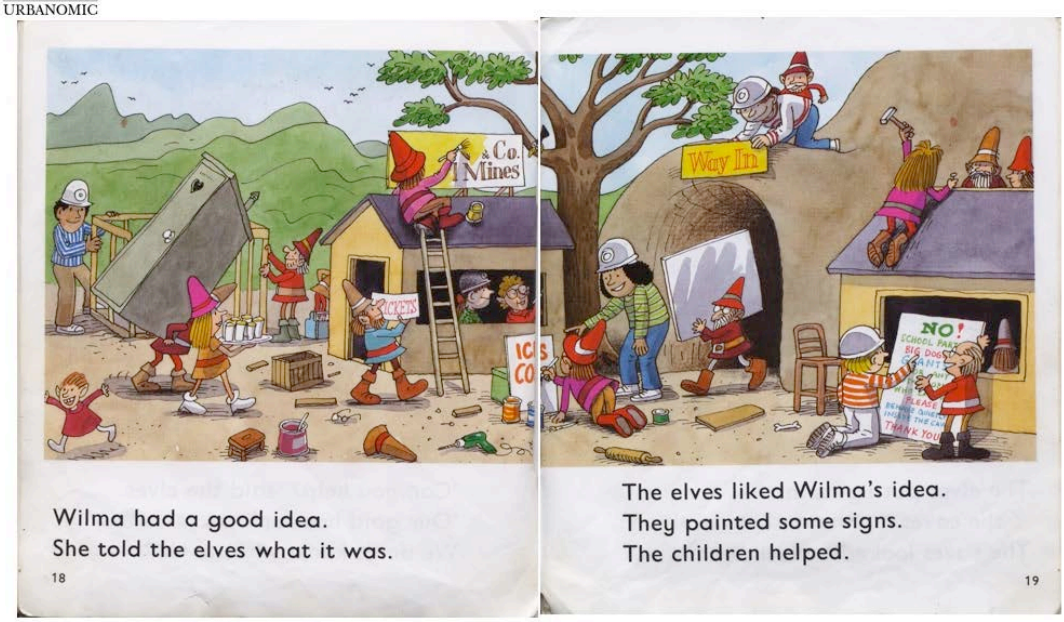
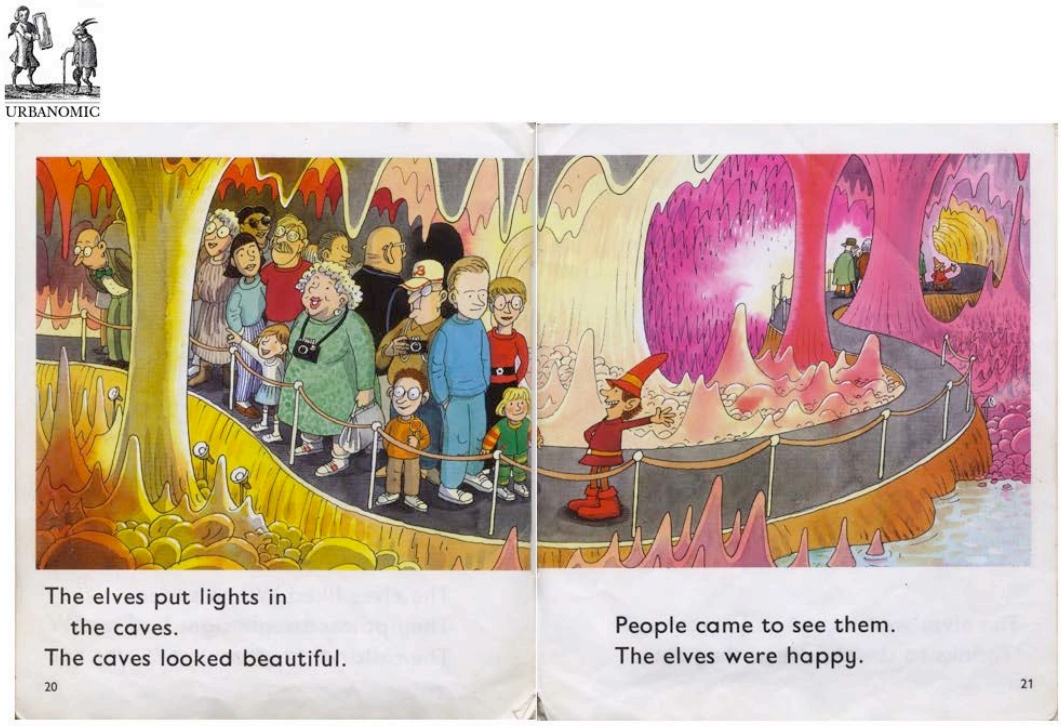


As *human* and *cultural capital* begins to rival mineral wealth as an economic factor, this new extraction process begins to probe other 'deposits' laid down in the first stage, exploring the voids and the deads left behind by primary extraction.



Redistributed across the surface of the planet, transmuted and transformed, a part of the surplus profits of production return in a strange new form, and begin to alter the landscape again.

This time, capital creates not a *chemical* but a *semiotic* landscape, turning it into a series of signs or images to be mined and consumed. In this way, the waste products of the industrial age are reprocessed, extraction begins anew, voids are apparently filled, and deads become undead



A happy ending, perhaps - It seems that there is always more wealth to be extracted , the land is productive again, and the pixies are gainfully employed

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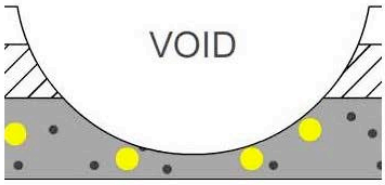

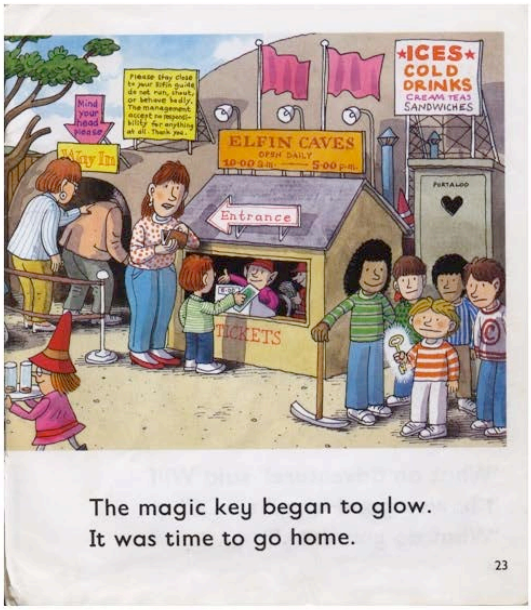

But what happens when capital moves on again - when the European funding, the subsidies and the arts grants run out ... ?

... or perhaps there's a better solution, as suggested by another primary text

Mr Wickles: I've gathered you here today for something big. At last. All these years of careful planning have culminated in this one glorious moment.

Fred (Bursts through door): Old Man Wickles, caught red-handed in your foul monster-making scheme! With your ugly, evil henchmen!

Businessman 1: Henchmen? Young man, we're investors, and we're listening to his pitch.

Mr Wickles: So, as I was saying... the Old Tyme Mining Town, a summer camp for kids – where they can have an authentic mining experience. They can dig for 18 hours straight, just like in the golden days of yore. They have the time of their lives, and we get free miners!

...or, as we call them in the arts community: Interns.

Leaving that question hanging, I'd now like to introduce our speakers, who will guide us through some very different forms of extraction. I'm sure that our participants' presentations, and the discussion to follow, will bring us closer to a general understanding of the logic of extraction, and, hopefully, closer to understanding how we ourselves and our contemporary situation continue to be caught in its complex and ramified foldings and refoldings, complications and encryptions of the earth.

POSTSCRIPT: THE WEST BRITON, JULY 12, 2012

visit our website **www.thisiscornwall.co.uk** WBR-E04-52

'Don't mine the mine,' say world heritage bosses ... 'You might spoil the mine'

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AN INTERNATIONAL heritage watchdog has said the resumption of mining in Cornwall should be halted.

The suggestion by United Nations Educational, Scientific and Cultural Organisation (Unesco) that mining at South Crofty could adversely affect a mining World Heritage Site has been branded "bizarre".

Plans to reopen the mine were discussed by the World Heritage Committee at its annual meeting in St Petersburg, Russia, earlier this month.

A report to delegates criticised Cornwall Council's handling of the planning permission for the development in what is part of the Cornwall and West Devon World Heritage Site.

> The suggestion mining will damage a mining heritage site is bizarre
>
> **George Eustice MP**

It said: "The World Heritage Committee expresses its utmost concern that full details of the resumption of mining at South Crofty were submitted to the World Heritage Centre after planning consent had been issued, contrary to the request of the World Heritage Committee at the time of inscription, and considers that these projects should be halted until an assessment has been made to their impacts."

But George Eustice, MP for Camborne, Redruth and Hayle, was dumbfounded and said: "The suggestion that the resumption of mining might damage a mining heritage site is bizarre.

"Reopening the mine at South Crofty undoubtedly enhances and brings to life the industrial heritage of the local area and should be supported because they strengthen the World Heritage Site."

The Government and local councils are required to protect designated World Heritage Sites from inappropriate development.

Councillor Mark Kaczmarek, portfolio holder for planning on Cornwall Council, said: "We welcome the World Heritage Committee's interest and look forward to working with the Department of Culture, Media and Sport to prepare a state of conservation report which will set out our firm belief that this development respects the mining landscape, while ensuring that it can evolve to meet the needs of the communities living within it today.

"The resumption of mining represents a continuation of the tradition responsible for creating the landscape for which we are recognised.

"It also delivers the conservation of two engine houses and a chimney."

The Unesco committee also recommended work to redevelop Hayle's South Quay with homes, a restaurant and supermarket be halted because it would harm the area's Outstanding Universal Value (OUV) – or cultural significance – for present and future generations of all humanity.

Former Hayle mayor, Councillor John Bennett said it was unlikely the Government would halt the development.

The committee has asked for reports about both developments in time for its next meeting in June, 2013.