

CHAINS OF TRANSFORMATION

The making of *Heavy Water: a film for Chernobyl*

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"Studying the distractions is part of the process". David Bohm.

Introduction

Made to commemorate the twentieth anniversary of the disaster, *Heavy Water: a film for Chernobyl* provocatively sets archived against fresh footage of the contaminated zone and relies, for its narrative thrust, primarily on first-hand experiences of the event rendered (somewhat unusually) through poetic monologue. Two contrasting extracts from the film act as a focus for discussion. *The Room*, based on Svetlana Alexievich's published transcripts of eye-witness accounts, carries strong humanitarian and socio-political overtones, while *Chain of Decay* delivers a litany of standard isotopic data modified for rhetorical and rhythmic effect. I present the intertextual journey from source to film (and beyond) as a concatenation of transformed outcomes which raise, en route, not only aesthetic, ethical and pragmatic issues distinct to each stage, but also transformative implications for protagonist and audience alike. Intermediate textual states include prose translations from Russian to English, and a film script challenged by poetic form. Adopting an experiential rather than a theoretical perspective throughout, I sketch a 'creative narrative' for the extracts. My commentary – accompanied by the artefacts *per se* and sometimes stripped back to the barest of notes – is intended as stimulant for further debate. I close on a number of thoughts and speculations on this process of creative transformation, including the question of 'hidden mediators': namely, those agents of transformation subsequent transformers and analysts may not easily access.

Inception(s)

Finnegas, an old man, had fished for seven years in a certain pool, knowing that whoever ate this salmon would acquire all knowledge. At last he caught it and, rejoicing, gave his young apprentice (aptly named Finn) strict instructions to cook it just right and not, on any condition, to eat any of it. But, being a boy, Finn grew distracted, staring into the dark woods. The salmon got burned. A blister, the size of his thumb, rose on one side of the fish. Terrified of failing his master, Finn pressed a thumb against the blister, hoping to press it back in. The blister burst. Three hot drops of salmon oil dripped onto the boy's thumb, which – instinctively – he thrust into his mouth. And so it was that Finn, the boy – not Finnegas, the old man – gained knowledge.

from: 'Three hot drops of salmon oil' (Petrucci 2006, p.254)

Deep in the winter of early 2002, I had something of a near-Finn experience. My salmon was Svetlana Alexievich's *Voices from Chernobyl* (as translated by Antonina Bouis). These remarkable women – editor and translator – had converted eyewitness accounts of Chernobyl into a juxtaposed textual narrative so effective that the voices of each speaker seemed to incarnate, unimpeded, on the ear. Wife and soldier; fireman, cameraman; peasant and

teacher; the official and the child: common voices, uncommonly eloquent. Opening *Voices*, I didn't receive instant knowledge – but I was most certainly burned. A key testimony, for me, came from Ludmila Polyanskaya: “Where are our intellectuals? Writers? Philosophers?” she cried. “Why are they silent?” Initially, recalling Seamus Heaney's warning not to “rampage permissively in other people's sadnesses”, I was reluctant to pick up my own pen. Again, from *Voices*, Alexandr Renansky reassured me that art, like “the plasma of an infected person, can serve to inoculate”. One way or another, I began to realise, we were all infected by Chernobyl. It continues to be active, to activate. I resolved, as far as I could, to listen. In fact, composing the long poem *Heavy Water* often felt like taking dictation. Those voices, that prise open your heart even as they shatter it, were profoundly insistent.

Heavy Water and *Half Life* followed: a diptych of books, two facets of a single extended poem. Later, in 2005, I received a call from Bethan Roberts at Seventh Art Productions, an independent film company based in Brighton. Phil Grabsky was interested in using the poem as primary material for a new film. Ultimately, two versions of the film (shot by David Bickerstaff and Phil) emerged, each designed for specific target outlets. That initial phone call launched many months of collaborative challenge, often involving intense comparisons of thought, experience and action. As with any lived, creative experience, it's impossible to translate (or recreate) the detail of all that; but I can sketch the journey, employing some of its material artefacts (both published and privately archived) as signposts. Archives are, in fact, a crucial resource here, as published material, on its own, may not always reveal very much about the background transformations and processes that occurred. I'll focus on two poetic segments, derived from very different sources: *The Room* and *Chain of Decay*.

The Work(s)

Frame 1. One Chain of Transformation (as I experienced it).

Hopefully, the ‘creative narrative’ of this particular Chain is self-descriptive. It's also simplified. For instance, there are many internal loops and linkages back (or ‘feedbacks’) where later aspects of the process have partly ‘rewritten’ earlier elements and experiences in the project. I'm sure that reviews of the film, for example, have changed how I watch it and what I see in it; the making of the film itself, certainly, has permanently transformed how I read (and perform) the poetry.

During this work, decisions were based on intuition and previous working experience, tuning the eye and the ear at various cognitive and aesthetic levels and across the different media used. The ideas raised in this discussion (such as the Chain itself) are mostly after the event. Let me go further: in my experience, most modes of transformative creativity are not driven by theory or theorisation, but are experiential in nature. My aim, then, is to use this Chain to focus on the tangible outcomes rather than the *post hoc* theory. I'm providing, as it were, the not-so-raw, created data.

There were also issues along the Chain having a distinctly ethical status. Transformations of text aren't necessarily, or perhaps cannot be, ethically neutral. Ethics and aesthetics are close cousins. Our aesthetic and intellectual choices – as editors, translators, poets, film-makers – do not control the reception of our created materials, but do ramify deeply into how the subject is understood by society, tending to activate different matrices of apprehension. The transformation of audiences *by* the artist's activity goes hand in hand with the transformation of self engendered in the artist *in* the act. And how do we value the desire of those who suffered Chernobyl to be (or not be) heard against the supposed duty of artists (collectively, if not individually) to offer something up on behalf of the neglected and excluded? My personal approach to this was a determination to listen creatively to the original protagonists rather than to deploy their experiences in service of my own ideas and imaginings. I

concluded that certain forms of remembrance, or re-membering, constituted a civilising act (upon my self as much as anyone else).

Finally, the form, detail and emphasis within the Chain will differ for each poetic segment under consideration (hence the plural ‘Chains of Transformation’ in the title). For *Chain of Decay*, for instance, the source material was of technical origin and already known to me from my studies in science: it didn’t arise from (though its use may have been partly suggested by) my reading of *Voices*. Frame 1 therefore really serves as a generalised, summarising template for discussion of the project as a whole; when dealing with particular segments of text or film, it must be re-established and reconsidered for each particular case and sometimes radically altered (or even abandoned) where necessary.

Frame 2. The Room. *Voices from Chernobyl* (the transcripts: Bouis translation).

One may note the underlined/ highlighted text and see how it relates to the poetry (and the film). Indeed, it’s fascinating to muse on how different my poetry might have been if I’d used Gessen’s version of *Voices* as my source. Comparing the text of the poetry for *The Room* with the source material (excerpted below) is as suggestive as it is illuminating:

“Where am I supposed to cry? In the toilet? But there’s a queue...and everyone there is just like me.”

Voices from Chernobyl (Bouis version, p.116) – actually used for the poetry

“Now where am I going to cry? In the bathroom? There’s a line for the bathroom – everyone like me is in that line.”

Voices from Chernobyl (Gessen version, p.150) – not used for the poetry

“Only this queue for weeping” (line 4 of *The Room*) clearly owes its central noun to Bouis. I certainly have very different responses (as a writer as well as a reader) to the two translations, even accounting for the ‘first love’ of the order in which I found them (Bouis before Gessen). I wonder how my own line, at its very emergence, might have responded to Gessen’s “line”?

Frame 3. The Room. *Heavy Water* (the poetry).

Why am I drawn to poetry? Because, in poetry, language constantly falls short of experience – but miraculously so.

Frame 4. Chain of Decay. *Heavy Water* (the physics; the poetry).

I interpreted this Decay Chart dually – as a physicist as well as a poet. My understanding of the source material was heavily dependent on my training in science and my later role as a physics teacher. I was certainly able to transform/ adapt the raw data to poetic purpose. The text I devised (almost a ‘found poem’, but not quite) aims for simplicity and clarity, but the data was edited in subtle ways to galvanise its rhetorical rhythm and drive. The decay series was also *inverted* in the poem (and film), so that we conclude with the atomic agent having an alarmingly long half life. Importantly, I subjugated the logical movement of what appears to be simply raw data to an intended emotional impact. This ‘local’ rhetorical device is echoed macroscopically by the fact that I placed this segment near the end of the film, for maximum impact. It’s also interesting to note how this short clip from the film is roughly equal to the permitted time spent shovelling graphite off the ruined roof of the reactor, a duration that translated (in many cases) to fatal exposure.

Frame 5. Chain of Decay. *Heavy Water* (the film script; battle of the line breaks).

It’s unusual for a film script to be primarily poetry-driven. None of the creative protagonists, including the film directors, had any significant previous experience of such work. Among

our limited resource of precedents, Tarkovsky stood out for his style and generation of mood; also, various productions involving contemporary poets were studied for what we'd wish to avoid as much as what they demonstrated to be possible. It seemed to me that many films involving poetry either overwhelmed the text (i.e. it was almost impossible to follow the words for long periods whilst watching what was happening on screen) or deployed the visuals as merely illustrative (thus tautological) of the textual content. This latter tendency, where it expresses itself, can bring about a cinematic equivalent to bad verse – as though the poetry has drawn the film-maker into a kind of 'visual doggerel' in which the filmic outcomes and progressions become heavy-handed, banal or obvious.

We concluded, after much exploration and discussion, that our chosen mode of deployment of *Heavy Water* (one which sought to emphasise the internalisation of the text whilst exploiting the many subtleties of visual and textual interpenetration) was unlikely to be a well-established one, and that many of the outcomes couldn't be imposed *ab initio* but would have to be forged in the actual shooting and making of the film. Our shared opinion was that the heightened language of poetry is potentially an agent of deep human transformation. It could provide, we believed, a penetrating experience of Chernobyl in its own right – not just a secondary or substitute experience, nor even merely a parallel one.

I've no doubt whatsoever that those early arguments and brainstorming sessions conditioned, profoundly, the many subsequent choices we made concerning which poetic monologues should be used and what was captured (and how) on camera. We also headhunted actors very carefully indeed for their known ability to work sensitively with poetry (for instance, Juliet Stevenson's controlled yet human immersion in character, as well as David Threlfall's impressive renditions of Wordsworth for the BBC, had been strongly noted). The decision was taken not to show any of these speakers on film: I, for one, felt this would help to emphasise the text *as poetry* rather than reconstructed documentary and minimise any false personalisation of the text.

The text of *Heavy Water* consists of various monologues and utterances broadly classifiable as voices, archetypes or roles. These fall naturally into certain groups, recast for the film as:

Male 1	=	official; Everyman; 'atom'
Male 2	=	male 'liquidator'; soldier; peasant; husband/ father
Female 1	=	local girl; young woman
Female 2	=	female 'liquidator'; older peasant/ wife/ mother; girl grown up

plus a narrating voice that focused on factual data and archive material. In the recording studio, inputs were made by David Bickerstaff and myself in an effort to influence the actors' sense of how the text might be performed (primarily to counter certain aspects of delivery acquired through training, learned technique, etc.).

In finalising the film script, there were some unexpected conflicts of form. For instance, there was real disagreement concerning whether or not the line breaks were necessary. One line of argument was that they were non-standard in this context (which, actually, I thought was helpful to our cause) and that the actors would (and needed to) find their own pauses, stresses and caesurae. In any case, weren't the attributes of linguistic intensity, rhythm and diction sufficient to identify this as poetry? My position – from which I felt I couldn't budge (the only occasion, I believe, where non-negotiation occurred) – was that these words shouldn't be seen as 'just text' and that the line breaks were essential in fully distinguishing that text from prose. Those line breaks had been hard-won; they were integral to how the meaning had been made and was conveyed in the poem. Erasing them imposed a false textual continuity. At one point, I nearly said "Could you present a film without cuts?" As it turned out, the actors detected and honoured them to different degrees; but, in terms of the script at least, they remained intact.

A final observation. Having completed my initial version of the script, it turned out we hadn't been studying the same editions of *Voices*. I began with (and, after I found Gessen's version, still preferred to work with) Bouis's translation, while David Bickerstaff had the Gessen. I sometimes sensed our different interpretations of the witnessed accounts of Chernobyl could be put down, in part, to the variations between those two sources.

Frame 6. The Room. *Heavy Water* (the film – some stills).

Much was said and written during the conference about the metaphor of creativity as a lens. At this stage of the *Heavy Water* project, the idea of creativity *through* a lens became literal.

Excerpts from the film (for *The Room* and *Chain of Decay*) were shown in the session, demonstrating how poetic and filmic imagery could commingle with music and other dubbed audio to generate unsettling or consolidating effects. The construction of the film involved, broadly, an initial edit to a rough voicing of the poems, followed by the recording of the poems proper, finishing with various reconstructions and fine tunings of the timing and emphasis of visual and sonic elements. A major issue here was (again) one of poetic line breaks and how they worked with/ against filmic cuts.

Throughout the making of this film, the ways in which visual (filmed) imagery and text-based imagery could combine forces (or, if handled poorly, compete) was at the heart of an ongoing and energetic debate. For instance, I realised that some of the poetry segments could be truncated (i.e. not read all the way through to the end) because the visuals were somehow completing, or substituting for, the omitted textual content. It seemed that the text, transposed to the visual medium and enmeshed there with a new set of semiotic codes, could generate and exploit a fresh set of co-sensory pungencies. As a poet used to page and voice, this heady co-existence (and, to a degree, coeval evolution) of visual and aural forms felt rather like adding a third dimension to the familiar board version of chess. In this, the expertise of Phil and David in ensuring that the film's visual and sonic elements developed organically with the poem's linguistic elements was impressive. Cinematographically, they succeeded in constructing a sonic-visual 'poem' around the aural-imagistic, text-based one.

Picking up on some earlier points about the reading style, many previous poetry films seemed unsure (or too sure, perhaps) what to do with the speaker(s) or, worse still, suffered from over-zealous or stylised acting in which (to be blunt and perhaps more than a little unfair) the working assumption seemed to be that poetry should always be presented to camera as an insufferably romantic or quasi-Shakespearean experience. This is a clear case of the performance of a text transforming it, as (whether or not we notice) it always must. Overcoming this mannered quality in (some) actors' renditions of poetry can be far from trivial. Our speakers were of the highest calibre and understood our approach; yet there were occasional aspects of style or technique we weren't satisfied with: effectively, the actor was 'translating' the text through learned and improvised methodologies of interpretation which ran counter to our understanding of how the material should be performed in this film.

Some core decisions regarding the overall manner of delivery, and a number of more 'local' decisions involving particular portions of the text, had already been agreed prior to production. *Chain of Decay* drew considerable (and often conflicting) discourse centred on precisely how that part of the sequence might be rendered. A number of suggestions were tabled, each backed by cogent argument. My own position on this was informed (not always usefully for a filmic context) by my long experience as a performer of my own work, and as co-founder of *ShadoWork*, a group working with plural vocalisation (more than one voice, often used non-sequentially) and experimental performance methods that give primacy to textual content. An early idea I had involved increasingly overlapping the lines to gain an

accelerated, climaxing effect. Eventually, the best solution was deemed to be a simpler, more direct delivery akin to a dry, newscaster-like voice, one that gains slightly in intensity.

What I learned here is that there are potential pitfalls in translating poetry to film that require you to stand your ground on certain issues, while the opportunities the transformative energy presents also demand flexibility, an ability to ‘let go’ of the text in its original form. There’s often a steep learning curve for all concerned in any innovative project, not least in terms of resisting or building on the inputs of inventive experts from another field. It rapidly became apparent that knowing when to hold on and when to hold back was a complex and vital skill in this type of work, one that both rouses and implicates the ego (particularly if you’re the author of the source material) as much as your aesthetics, intuition and experience.

Frame 7. The Room. Publication in ISR (*Interdisciplinary Science Reviews*).

Mostly *post hoc* rationalisations, accretions, revisions. A systemisation of thoughts and issues that don’t always reflect the actual, lived, ‘chaotic’ experience of composing the poem. Useful, perhaps, as a means of consolidating and extending the transformational links in the Chain and for stimulating new Chains from any dangling ends.

Closing thoughts. Three cooler drops...

Alexievich’s summarising words on the jacket sleeve of *Voices* demonstrate the creative plurality and plural responsiveness required and exemplified in every part of this project:

This is the way I see and hear the world: through voices, through details of everyday life. This genre – capturing human voices, confessions, testimonies – allows me to use all of my potential, because one has to be at the same time a writer, a journalist, a sociologist, a psychologist, and a priest.

Voices from Chernobyl (Gessen version, 2005)

At first glance, this statement of total involvement from the editor seems to run against the way in which many of the book’s entries are entitled ‘monologue’. This framing device may be an attempt to intensify the overall sense of intimacy and courageous directness in Alexievich’s material; but it also tends to give the impression there was no editorial intervention, nor any interviewer (let alone interlocutor) at all. To what extent, though, were these testimonies conditioned or influenced through journalistic suggestion, editorial selection, etc.? *Voices* doesn’t dwell on how the contributors were found, selected or prompted, or specify what questions (if any) were asked or what context was created during interview. Alexievich’s agenda was, from what I can tell, utterly worthy; but it was an agenda nonetheless. Given all the multiple, interwoven subtleties of transposition, editing and translation, and the demonstrable shifts in emphasis and detail between the two English versions of Alexievich’s original Russian text, shouldn’t we recognise Alexievich and her translators as ‘hidden mediators’? Not so hidden, perhaps, in the case of Gessen, whose approach carries certain traits and interpretations I’d consider (arguably) ‘American’, and which therefore stand out in greater relief given the cultural origins of the primary material.

I’d have to include myself, too, among these hidden mediators. So much of the process of creating a book occurs off and behind the page, in ways I often find difficult to retrieve myself. There’s probably another book to be written about that, concerning the complexly linked technical, aesthetic and poetic considerations that go into composing, arranging, editing and redrafting something like *Heavy Water*... the many mediations and transformations of consciousness that occur in and among these various overlapping processes. The facts are that 86 segments were composed, 82 of them over a period of just over two months, with afterthoughts aimed at filling ‘gaps’ perceived during the editing and re-reading of the book and source materials. The construction of the book entailed an

extended period of editing and re-organisation (often involving outside readers), a major part of which involved attending to, and creating, a strong and suitable sense of formal construction across the text (including 'concrete' pieces which imitate the appearance of DNA). But, as ever, such facts are only the tongue-tip of the story.

It's crucial to stress my mediation here, particularly in the light of what I call 'The Geometry of Experience'. In short, this is a loose (and perhaps clumsy) label for my notion that, in any human situation, most of the meaning and the sentiments (as opposed to the sentimentality) are carried by (or in) the 'angles' and relationships between people, things, words: i.e. who did or said what, when, where, how, and to/with what/whom. In a sense, all those angles and distances between the elements of an experience generate a geometric shape, of sorts, which (when recreated/redrawn in some way by the artist) readers or members of the audience can fill in for themselves. In my opinion, a good writer or film-maker trusts the geometry they've created and avoids the temptation either of analysing the parts away or of spelling the relationships out. My decision not to make myself *overtly* present as an authorial character (there was an early suggestion that I might read some poems to camera) stems from my feeling that it was best *not* to add that extra 'point' to the existing historical geometries being created (first in the poem and, later, the film) from what had happened at Chernobyl. Of course, that authorial point is unavoidably there: it's just more difficult to locate. But refusing to make it pivotal may have helped to focus attention on other facets.

My second point is to do with the ongoing metaphor, in this conference, of the creative lens. Whilst considering this, I first felt a tendency to consider lens in the plural (creativity as multiple lenses) and, later, the urge to reject the metaphor altogether. The project I've been describing was an immensely complex, organic process. Even my own metaphor of a chain implies restraint, when actually I often found the process intensely fluid. I suppose a length of chain can have both of those qualities. Chains enable us to describe (i.e. fix) certain links, and suggest that there are constraints (or pressures) on what we do, which may be ethical (discussed earlier), aesthetic (e.g. the etiquettes of, or when moving between, different forms) or practical (finance, time, TV timeslot, actor training and availability, anniversary deadlines, etc.). At the same time, chains can bend and flow, are also dynamic. But lenses are too mechanistic, too predictable and repeatable in their behaviour. Given the lens and the input, you can determine the output; making *Heavy Water* was about engaging with creativity where the outcomes (or even goals) weren't always known. Neither can the impact of the film on its viewers be entirely determined or controlled: they, too, are co-creators. Perhaps a better metaphor for creative transformations, then, would be mutation, or some form of polymorphic moulting! Our central metaphors for creativity need (ironically) a little more precision as well as imagination...

.... and imagination brings me to my third and final thought. At this late stage of the *Heavy Water* project, now moving into analysis (articles and papers) and recycling (ongoing screenings, publishers' reprints), it might seem that imagination is barely implicated (beyond its role in advertising) in the near-automatic forms of cultural reproduction involved; but it can still imbue every aspect of what happens next. If we respond to Chernobyl personally, positively, only then can sustainable and sustaining collaborations and activities be discovered with which to address it. In this process of being – and becoming – fully human, art and its various languages provide interfaces, helping us to access the self in ways that can transcend the formalities of institutions and socialised values. Imagination (along with an understanding of how it gets translated across cultural modes and media) allows us to operate more radically and powerfully than with intellectual efficiency alone. It's not only poetry that can get lost in translation across forms, but empathetic imagination too. To rewrite a line from Proverbs: "Without imagination, the people perish". And I wonder if that 'weeping room' was (in a sense) already there, as a Platonic potential or 'ideal', in the social and technical structures which led us to imagine nuclear power? Perhaps the film, the poem, the book of transcripts, the speech of eye-witnesses, their experiences of the accident, the

'accident' itself – though not exactly inevitable or predictable – were nevertheless somehow pre-existent as a Chain of potential forms co-established with the blueprint for the reactor, potentials that (at least in part) drove those very transformations? Other Chains were also possible of course, other outcomes; but that particular possibility, the one that bloomed so tragically on the night of the 26th April 1986, was – like all the others – latent, a kind of 'receiver' awaiting its actuality. As our technology becomes more complex and precarious, our imagination, as well as our intelligence, must grow in equal measure. Not all the fish we catch are edibly benevolent. We should be most careful where we direct our thumbs of creative imagination, and to what ends we apply that sacred pressure.

Each object we create, whether fanciful or rooted in cast-iron physical-mathematical precepts, is an extension of our imagination... Which is why the quantification of Chernobyl and its after-effects, crucial as it is, can never become our sole aim. Chernobyl stands to remind us that knowledge is as much qualitative as quantitative. One of the chief outcomes of Chernobyl will be what we allow it to tell us about ourselves, as an expression of our negative imagination and its myths... As John Steinbeck said, 'An animal which must protect itself with thick armour... is on the road to extinction'.

from: *'Three hot drops of salmon oil'* (Petrucci 2006, p.258)

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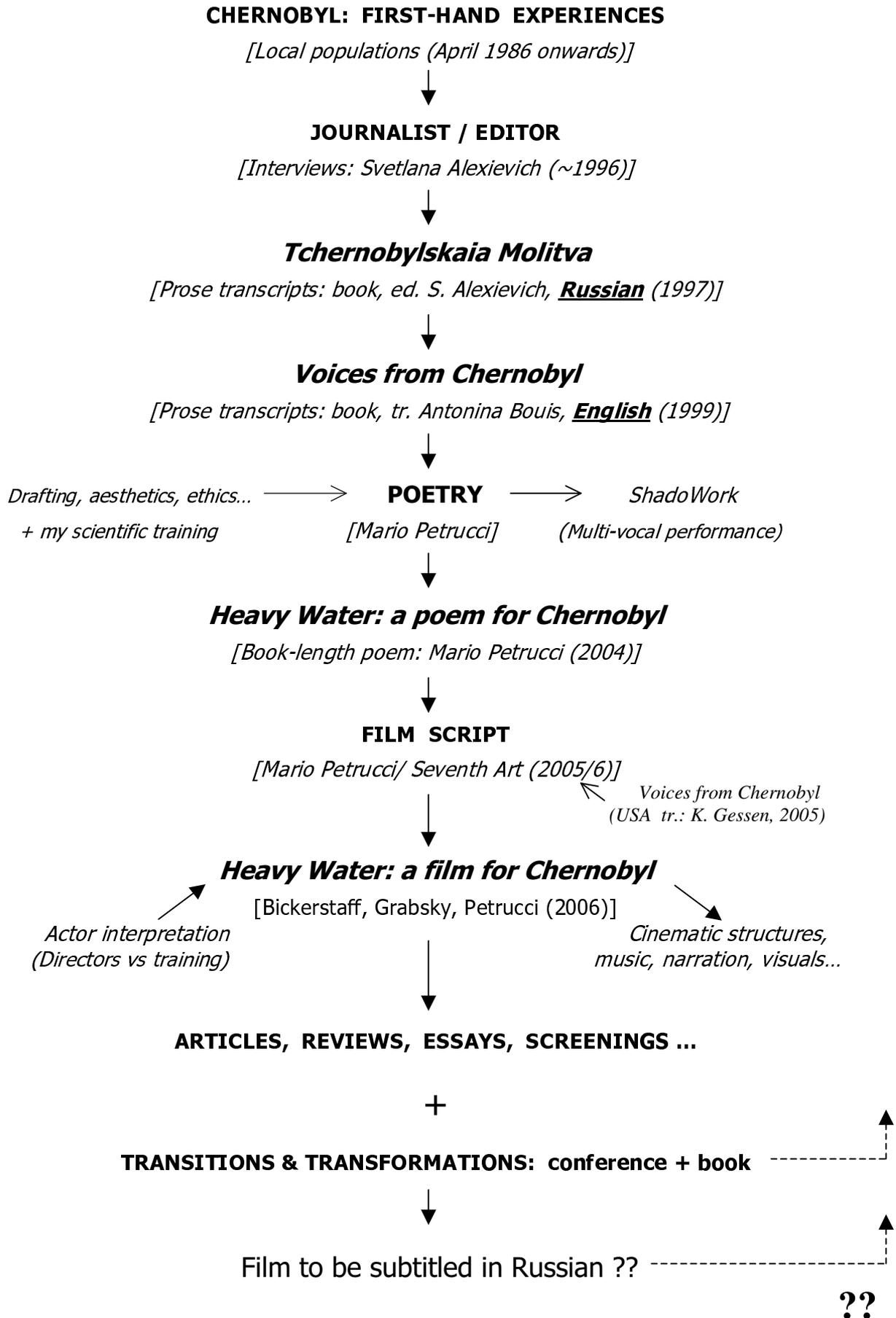
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THE ROOM

This hospital has a room
for weeping. It has no crèche.
No canteen. No washroom queue.
Only this queue for weeping.
No lost property booth. No
complaints department. Or
reception. No office of second
opinion. Of second chances. Its sons
and daughters die with surprise
in their faces. But mothers
must not cry before them. There is
a room for weeping. How hard
the staff are trying. Sometimes
they use the room themselves. They
must hose it out each evening.
The State is watching. They made
this room for weeping. No remission –
no quick fixes. A father wonders
if his boy is sleeping. A mother
rakes her soul for healing. Neighbours
in the corridor – one is screaming
It moved from your child to mine.
More come. Until the linoleum
blurs with tears and the walls
are heaving. Until the place can't
catch its breath – sour breath
of pine. And at its heart
this room.

CHAIN OF DECAY

Lead 207 Stable
via beta and gamma radiation

Thallium 207 – 4.77 minutes
alpha radiation and x-rays

Bismuth 211 – 2.1 minutes
beta and gamma radiation

Lead 211 – 36.1 minutes
alpha radiation

Polonium 215 – 1.78 milliseconds
alpha and gamma radiation

Radon 219 – 3.96 seconds
alpha and gamma radiation

Radium 223 – 11.43 days
alpha and gamma radiation

Thorium 227 – 18.7 days
beta and gamma radiation

Actinium 227 – 21.77 years
alpha and gamma radiation

Protactinium 231 – 32,760 years
beta and gamma radiation

Thorium 231 – 25.52 hours
alpha and gamma radiation

Uranium 235
703.8 million years