Language Under Stress:

The Poetics of Rae Armantrout

"Poetry wants
to make things mean

more than they mean,"
says someone,

as if we knew
how much things meant,

and in what unit
of measure.

Rae Armantrout

'Meant' ~ *Just Saying*

Briony Bennett-Mills
UNIVERSITY OF SOUTHAMPTON

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FACULTY OF HUMANITIES

School of English

Language Under Stress: The Poetics of Rae Armantrout

by

Briony Lucy Bennett-Mills

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ABSTRACT

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This thesis explores the role of metaphor and scientific vision in the work of Rae Armantrout, drawing upon cognitive theories of metaphor and interlanguage. It suggests that Armantrout's poetry offers a compelling opportunity to explore difficulties of language, particularly those that occur when poets use methods and metaphors typically associated with science. Chapter One sets out an Introduction to Armantrout's work followed by Chapter Two, which then goes on to locate the origins of Armantrout's poetics of inquiry and considers how her use of scientific and religious vision works alongside her personal origin stories to create a unique uncertainty. This uncertainty fosters an environment of inquiry and helps uncover what Armantrout labels the problem of 'ventriloquy'. Chapter Three takes up this problem and asks whether Armantrout's failure to avoid 'the interventions of capitalism into consciousness'[1] distances her writing from its Language writing origins and demonstrates an increased conflict between lyric and Language that arises from a growing interest in problems of self. Chapter Four applies theories of conceptual metaphor and conceptual integration networks to the poetry in *Money Shot* and *Just Saying.* It argues that these theories are the most fertile and relevant for the analysis of Armantrout's poetry. By engaging with scientific language and vision in her use of hyper-extended metaphor, Armantrout's readers are forced to create new connections from 'foreign' rules and associations. Chapter Five adapts the linguistics concept of Interlanguage in order to navigate these difficulties and demonstrates how Armantrout's use of science and metaphor contributes to the formation of a new poetic Interlanguage. In conclusion, this thesis will consider whether Armantrout's poetry offers a valuable method of creating accessibility and understanding in the claims given by both science and poetry by paralleling the action of metaphor: thinking of one in terms of another to find, destroy and create connections.

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[1] Rae Armantrout and Singing Horse Press, *Collected Prose,* (San Diego: Singing Horse Press, 2007), p. 120.

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DECLARATION OF AUTHORSHIP

I, Briony Lucy Bennett-Mills,

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Language Under Stress: The Poetics of Rae Armantrout

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. [Delete as appropriate] None of this work has been published before submission [or] Parts of this work have been published as: [please list references below]:

Signed:

Date:

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Definitions and Abbreviations

PIL	Poetic Interlanguage
HEM	Hyper-extended metaphor
ESP	English for specific purposes
EST	English for science and technology
LHC	Large Hadron Collider
RQFT	Relativistic Quantum Field Theory

Chapter One:
Introduction

> 'I'm interested in opacity; in the ways the world is opaque. I'm also interested in deception, in how we deceive each other and how we deceive ourselves... When we become conscious, we construct a world from the world already mysteriously arranged for us. We decide what is significant, salient, but foreground and background can shift.'
>
> Rae Armantrout *Collected Prose*[2]

> 'I write so that I won't be a passive victim – or ungrateful recipient – of what the world throws at me. I write to talk back to the world. I also write to clarify problems for myself.'[3]

1.1 Language Under Stress

> *'The universe is cleverer than we are,* and to investigate it we need to be creative as well as critical.'[4]
>
> Timothy Ferris

Rae Armantrout argues that her poetry is a 'Cheshire poetics', one that 'involves an equal counterweight of assertion and doubt' and that vanishes in the blur of what is seen and what is seeing, what can be known and what it is to know'.[5] Her poetry engages with a multitude of different languages and voices; those of scientific, religious, and poetic discourse as well as examples of everyday language, which assail her in the form of phone bills, songs on the

[2] Armantrout and Press, pp.124–125.
[3] AltDaily, 'A Chat with Pulitzer Prize Winner in Poetry Rae Armantrout ', *AltDaily*, (2010), <http://altdaily.com/58a-chat-with-pulitzer-prize-winner-in-poetry-rae-armantrout/> [accessed 18 April 2018].
[4] Timothy Ferris, *The Whole Shebang: A State of the Universe Report*, (New York: Simon & Schuster, 1998).
[5] Armantrout and Press, p. 55.

radio and overheard conversations in the doctor's surgery. All of the language she encounters in her lived experience is interrogated for what it is capable of revealing and to discover what it withholds. This thesis will argue that Armantrout's poetry offers an opportunity to examine difficulties of language, particularly those that occur when engaging with the visions of different authorities. It also argues that the inherent visions and languages of science should be treated as a foreign language by poets wishing to productively engage with them. Scientific language and vision obeys the same rules as other types of language, that is, it cannot be dissevered from its unique history of usage, association and evolution within its particular authority. Additionally, the thesis will examine the role that poetry can play in relating perception to reality in order to deepen our understanding of lived experience and scientific theory. This thesis will suggest that Armantrout's poetry provides an example of poetry that relentlessly manipulates metaphor and language in order to create a unique poetics of inquiry able to revise difficult questions around self, collective, attention and culture. Such questions consume Armantrout's poetry, which holds a mirror up to contemporary American poetics and contemporary science more generally. Despite the wider engagement with these concerns, Armantrout's Language origins and even her early experiences with LSD[6] complicate her view of self, which informs all of these questions. Nikki Skillman argues in *The Lyric in the Age of the Brain* (2016) that 'Language poetry installed the interpretation of self at the centre of oppositional poetics' self-conception [… and that] the status of self has continued to shape the oppositional rhetoric and formal practices of conceptual poetries'.[7] Armantrout's writing joins 'oppositional poetries'[8] in dissolving the 'distance between writing and experience',[9] while preserving a mistrust and awareness of words themselves. Skillman continues that Armantrout marks an 'exception' to other avant-garde' conceptions of self because the 'eclectic influences on her dissolution, distancing and reconstitution of the lyric voice very clearly include biological discourses of mind'.[10] For Armantrout, questions of self are inextricable from questions of language and culture; a culture that, as her poetry reflects, is heavily shaped by the discourse and visions of science.

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[6] See Armantrout and Press, p. 161.
[7] Nikki Skillman, *The Lyric in the Age of the Brain*, (Boston: Harvard University Press, 2016). p. 317.
[8] See: Erica Hunt's essay, 'Notes for an Oppositional Poetics' in Charles Bernstein's *The Politics of Poetic Form.*
[9] Charles Bernstein and New School for Social Research, *The Politics of Poetic Form: Poetry and Public Policy*, (New York: Small PressDistribution, 1990), p. 199.
[10] Skillman, pp. 317–18.

Armantrout's religious upbringing resulted in a lifelong interest in origin stories and questions around the nature of the universe. She displays an unceasing curiosity for the construction of self through and beyond language, which causes her to question everything that comes to us through words and metaphors. Armantrout's poetry consistently engages with scientific discourse not only for the visions it offers on the nature and origins of the universe, but also for its ability to 'leav[e] us with more questions than answers'.[11] Her poetic journey is one of constant revision as she tries to 'clarify problems for [her]self'. She finds that these problems or 'ultimate questions',[12] which frequently relate to origins, self and language, are complex and cannot be formed solely through one type of discourse. This thesis will attempt to navigate the different discourses Armantrout uses in her poetry devoting sizeable focus to the discourse of science.

Scientific language and vision is a persistent feature in Armantrout's writing—a feature she uses to revise, subvert and break down existing meaning. I argue that Armantrout's poetry does not only merge what this thesis recognises as the different languages of science and poetry, but that her particular manipulation of them creates a third form of language that can be seen as a new poetic interlanguage. The different languages of science and poetry share a number of important meeting places, but Armantrout finds the shared difficulty of relating perception to reality in the understanding of our universe most fertile. She notes that this creates a gap between 'what is seen and what is seeing'. Physicist David Deutsch argues that the problem this gap creates is one reason that 'scientists turned to induction; the idea that the distant resembles the near, the unseen resembles the seen'.[13] However, both Armantrout and Deutsch find that this method cannot be used widely in science or language as often, in the reality that scientific theory explains, the seen does not resemble the unseen, or as Armantrout notes in the case of language, '*thing* and *idea* do not really merge'.[14] This difficulty, combined with a mistrust of language and metaphor, is one reason for the collision of discourses and languages in her poetry. At times, Armantrout's poetry has been labelled difficult, or 'tantalisingly hard',[15] and at others it has been called 'academic and highbrow' for its characteristics, such as: **'**condensation, juxtaposition, parataxis, profusion of inner

[11] Armantrout and Press, p. 79.
[12] Armantrout and Press, p. 75.
[13] David Deutsch, *The Beginning of Infinity: Explanations That Transform the World*, (London: Penguin Books, 2012).
[14] Armantrout and Press, p. 55.
[15] Dan Chiasson, 'Entangled: The Poetry of Rae Armantrout', *The New Yorker*, Books , May 2010 (2010), <https://www.newyorker.com/magazine/2010/05/17/entangled> [accessed 8 June 2018].

voices mixed with outer stimuli, conflicting elements, irony and detachment, [and] meta-commentary'.[16] Despite these labels and difficulties I want to suggest that Armantrout's poetry offers a useful and repeatable method of poetic inquiry that is capable of furthering our grasp of difficult problems, such as the nature of self and how it relates to language, and also to propose that it has the ability to deepen our understanding of difficult scientific problems and visions. Some critics, like Aaron Kunin, go as far to say that her poetry 'is one of the great achievements of modern letters'[17] and, at the very least, finding a method to engage with Armantrout's poetry gives readers a way into poetry that replies urgently to the particular moment in which we live—a moment in which language comes to us in quantities and speeds as never before in history. The Internet society that we live in creates fragmentation in our daily language and at the same time the social media we use plays an enormous role in language's proliferation, yet also subverts it and affects our ability to attend fully to the everyday speech and language that constitutes our world and knowledge. This thesis will examine the different techniques Armantrout uses in her objective to place language and poetry under stress, while she 'is minding the gap[s]'[18] between '*thing* and *idea'*, self and other, attention and distraction, and science and poetry, on her journey through a continuous cycle of question and revision.

It is not only the use of a multitude of discourses that makes interpreting Armantrout's poetry problematic, but the structure of her poetry creates frequent moments of disjuncture, silence, and distance. This is partly due to her notational writing process—she collects moments of experience and found language, which are combined to form short meticulous stanzas. These short and internally cohesive stanzas form the basic structural elements of Armantrout's poetry, fractals that contain clues to the overarching concerns. Armantrout says, 'the relation between stanza and stanza or section and section is often oblique, multiple or partial' and that this technique, though vexed, 'isn't an accident. It's a way to explore the relation of part to whole'.[19] Stanzas and poems continually replicate images and themes through layered instances of day-to-day life, found language and experience; this replication contributes to a poetic search for connection and reconnection with changing landscapes of experience.

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[16] Natalia Carbajosa, 'An Interview to Rae Armantrout', Jot Down, (2012) <http://www.jotdown.es/2012/03/an-interview-to-rae-armantrout/> [accessed 6 January 2017]
[17] Aaron Kunin, 'Accordingly: An Interview with Rae Armantrout', *Prac Crit,* Edition 3 March 2015 (2015), <http://www.praccrit.com/poems/accordingly/> [accessed 8 June 2018].
[18] 'Accordingly' by Rae Armantrout, first Published in *Prac Crit: Kunin.*
[19] Armantrout and Press, p. 62.

Repeated explicit and implicit requests, often via rhetorical questions and direct instruction, are evident in the poetry for the reader to participate in the creation of associations and meaning, moving poetry from the personal to the global—an invitation to understand the 'isolation of experience'[20] in a conflicted 'pop culture'.[21] Armantrout writes that she makes 'desultory notes for a while over the course of days or weeks, [to see] what emerges, what sticks to what, what sort of units form'.[22] This results in what has been called a type of poetic collage, but such simple assessment does not hold up as readers move through the poetry. Matthias Regan writes in *Chicago Review* that Armantrout performs continuous deconstructions of the 'faux-collage' of found language in her poetry: 'mixing familiar tones or voices—say the diction of a TV anchor man with that of an Alzheimer's patient'.[23] This amalgam of voices, along with the frequent and scrupulously placed line breaks, prevents readers from settling on secure interpretations of the poetry. Some of these attributes arose from the particular influence of William Carlos Williams and Emily Dickinson. Armantrout says in discussion with Lyn Hejinian that 'Williams was the first poet [she] read seriously',[24] and in an interview with Ben Lerner[25] that she got her sense of the line from reading William Carlos Williams. Stephanie Burt expands on this by writing that 'Williams and Dickinson together taught her to turn [the stanzaic lyric] inside out and backwards, how to embody large questions and apprehensions in the conjunctions of individual words'.[26] Armantrout says she was 'moved' by Williams's questioning and his ability to 'put things in dialogue with mind and somehow make them hold up their end of the conversation'.[27] This desire for a continual dialogue with 'assertion and doubt' is one of the primary reasons for Armantrout's constant manipulation and critique of language and voices, a motivation that began in early childhood.

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[20] Noel-Tod, J. Times Literary Supplement, in http://www.upne.com/0819568793.html [accessed 2 May 2015].
[21] Todd Pederson, 'Review of Books: Versed', *Rain Taxi*. 05.03.13 (2009), <http://www.raintaxi.com/online/2009fall/armantrout.shtml> [accessed 5 March 2013]; Pederson.
[22] Marjorie Perloff, 'An Afterword for Rae Armnatrout', *Narrativ,* (2009), <http://poemsandpoetics.blogspot.com/2010/03/marjorie-perloff-afterword-for-rae.html> [accessed 10 Janurary 2017].
[23] Matthias Regan, *Chicago Review*, 47. 1 (2001), 121–27.
[24] Tom Beckett, Bobbie West, and Robert Drake, *A Wild Salience: The Writing of Rae Armantrout*, (Cleveland: Burning Press, 1999), p. 25.
[25] Ben Lerner, 'Rae Armantrout', *Bomb*, BOMB 114/ Winter (2011), <https://bombmagazine.org/articles/rae-armantrout/> [accessed 27 February 2017].
[26] Stephanie Burt, 'Where Every Eye Is a Guard', *Boston Review*, April/ May 2002 (2002).
[27] C. Rankine and J. Spahr, *American Women Poets in the 21st Century: Where Lyric Meets Language*, (Wesleyan University Press, 2002), v. 1.

Armantrout was born in 1947 at a military hospital in Vallejo, California[28] and grew up on a naval base in San Diego with her mother and father; she writes that her father, a Chief Petty Officer, was an 'unhappy man' and her mother, a 'myth-maker',[29] had a love of everything western. It was her relationship with her mother, whose 'myth-making' she viewed as 'repulsive',[30] which seems to have had the most impact on her poetry and she writes that the scepticism, which arose from her upbringing, 'may be what lies behind'[31] her propensity to write poetry over fiction. Despite Armantrout's recognition that she did not retain any of the religious practices from her childhood, she says she did continue the 'questions [and] habits of mind'[32] formed during this time. This influence has had a direct and observable impact on the origins of her poetics and offers one reason why Armantrout believes that her 'interest in science begins with religion'.[33] Armantrout later studied anthropology at San Diego State University and her choice demonstrates an early interest in the complexity of human cultures; an interest mirrored in the use of social, physical, and biological sciences in her poetry. She completed her undergraduate studies at Berkeley studying with Ron Silliman with whom she developed a friendship and a 'shared aesthetic';[34] it was a relationship that later contributed to her affiliation with Language Poetry. Armantrout's first poetic appearance was in Clayton Eshleman's *Caterpillar*[35] magazine, shortly before undertaking a Master's degree in Creative Writing at San Francisco State University and publishing her first book of poetry, *Extremities,*[36] in 1978.

Extremities represents both a start and end point for her poetry thus far. The book begins with 'going to the desert'—a location in which both poet and reader catch a glimpse of the future 'lines across which/ beings vanish/flare'.[37] *Extremities* signals the beginning of a lifelong poetic journey concerned with critiquing self and language, a journey which, by her most recent two volumes *Itself* and *Partly,* has come full-circle. This thesis will move chronologically through Armantrout's poetry illustrating her return to the same questions and

[28] Beckett, West, and Drake.
[29] Rae Armantrout, *True*, (Berkeley: Atelos Publishing Project, 1998).
[30] Penn Sound, 'Close Listening', in *Close Listening - Readings and Conversations at WPS1.org*, ed. by Charles Bernstein (Clocktower Studio, New York, May 10, 2006), p. 28.18.
[31] Ibid: 01:37.
[32] Rae Armantrout, 'Cosmology and Me', in http://jacketmagazine.com/27/arman-essay.html [accessed 2 May 2015].
[33] Armantrout and Press, p. 75.
[34] Armantrout and Press, p. 165.
[35] J. Rasula, *This Compost: Ecological Imperatives in American Poetry*, (University of Georgia Press, 2012).
[36] Rae. Armantrout, *Extremities*, (California: The Figures, 1978).
[37] Armantrout, 'Extremities', in *Extremities*, p. 1.

problems but from different directions. However, as the poetry in *Extremities* and *Partly* demonstrate any ending is a 'false bottom',[38] and any beginning an illusion of language, so the location her poetry takes can only represent a vantage point from which to observe how her question has been modified, or her self 'marked', by the experiences or 'tales'[39] of her life to date.

1.2 The 'Slippery Slope' of Language

> 'So, the poem, like all metaphor, wants to have it both ways.'
>
> 'Metaphor is like one thing swallowing another: the bulge of the antelope in the boa's midriff.'[40]

Recently, Aisha Bhoori argued in a review of Armantrout's 2015 volume *Itself,* that her poetics had arisen because of an inability 'to separate distrust of the self from distrust of language'.[41] In the case of language, Armantrout tells us that metaphor is one of the components which 'should make us suspicious'.[42] It underwrites her sustained interrogation of different types of language over which 'a pall / of suspicion hangs'.[43] Her particular manipulation of metaphor means that it is necessary to give it sustained argument, but it is clear that it's only one of the ways in which Armantrout tries to 'stand inside uncertainty'[44] when faced with the truth claims of different authorities, such as science and poetry. She writes:

> Metaphor
> is ritual sacrifice.
>
> It kills the look alike.
>
> No,
> metaphor is homeopathy.

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[38] Armantrout and Press, p. 126.
[39] Armantrout and Press, p. 168.
[40] Armantrout and Press, p. 89, p. 105.
[41] Aisha Bhoori, 'A Moebius Strip Search: Rae Armantrout and the Speaking Id-Self', *The Adroit Journal*. 13 (2015), <http://www.theadroitjournal.org/issue-thirteen-aisha-bhoori/> [accessed 1 January 2018].
[42] Armantrout and Press, p. 105.
[43] Rae Armantrout, *Veil: New and Selected Poems*, (Connecticut: Wesleyan University Press, 2001). p. xiii.
[44] Armantrout and Press, p. 76.

A healthy cell
exhibits contact inhibition.[45]

In ‘Integer’, metaphor becomes an act of language worship; by sacrificing the concrete to appease the abstract it calls to mind a likeness, before killing the resemblance and diluting meaning in an attempt to cure, whilst simultaneously deceiving the patient. For Armantrout metaphor resists definition. It slips through her poetry demonstrating the avoidance behaviour of ‘healthy cell[s]’ which, according to cell biology, will modify their movement to evade collision. One of the difficulties of metaphor is that it takes two unequal ideas and tries to bring them together to form a holistic concept in an attempt to understand something complex or abstract. Immediately, this uncovers the problem that contemporary poets like Armantrout find with metaphor, which is that it is unable to provide us with cohesive answers to abstract questions. The title of Armantrout’s poem misleadingly suggests that the poet’s target is something whole or complete, an idea which she then begins to dismantle: ‘One what? / One grasp?’. Michael Leddy argues that Armantrout’s writing continually challenges the type of ‘narrative sense making’ that attempts to lead to a ‘single conclusion’, which she labels the ‘one true path’.[46] The drive of any authority to use language to arrive at linear conclusions is consistently rejected in Armantrout’s poetry, and in metaphor’s inability to do just this she finds its chief advantage.

Armantrout’s poetry contains recurrent themes, symbols and language, creating a personal network of associations and meanings that become more complex with each layer as meanings from previous appearances are carried forward in the poetry. This technique is not specific to Armantrout but being aware of this network is fundamental when considering metaphor in her poetry. One of the ways Armantrout puts language under stress is by forcing metaphor to become fragmented, hyper-extended and even, as in ‘Integer’, critiqued by itself. In ‘Integer’ Armantrout draws our attention to metaphor for the entire second section making it reasonable to suggest that the ‘dark’, which appears in both the first and last sections of the poem, is of importance; particularly when this ‘dark’ ‘pervades’ ‘collections’ of words. But lexical items in the poem refuse to collide, thus not allowing the poet to ‘grasp’ their

[45] Rae Armantrout, 'Integer', in *Versed*, (Connecticut: Wesleyan University Press, 2009), p. 93.
[46] Michael Leddy and Rae Armantrout, '"See Armantrout for an Alternate View": Narrative and Counternarrative in the Poetry of Rae Armantrout', *Contemporary Literature*, 35. 4 (1994), 739–60.

meaning; there are no ‘stars’ to provide light of recognition and both the poet and the meaning remain in the ‘dark’. This ‘dark’ becomes an important feature of the poem and Armantrout’s poetry more widely, while metaphor’s resistance to definition and the resulting conflict is required for the health of ‘cells’ and the work that the poem does through language. Yet even in this idea there is no solidity, the myriad associations acquired through metaphor play are only ‘temporary credits’. The short third section of the poem reveals another repeated theme in Armantrout’s poetry—the investigation of embodied experience; like cells that are subject to renewal and change, our experiences constantly modify our ideas of the world and what language means to us.

Armantrout’s poetry confirms her continual mistrust of metaphor; in ‘Integer’ this mistrust is observed in the metaphor’s darkness and violent replacement of associations, which ‘kill’ ‘look-alike[s]’. Despite its complexity, one of the least contested functions of metaphor is its ability to suggest ‘complex patterns of relations and associations’.[47] However, in ‘Integer’, using metaphor to find ‘one grasp’ leaves poetry closed, unresponsive and ‘not amenable/ to suggestion’. Armantrout uses metaphor with awareness; sometimes it is viewed with caution, as in ‘Integer’, yet at others it is viewed with pleasure, because Armantrout finds it ‘attractive to be deceived’.[48] One of the constants in her poetic exploration of metaphor is her belief that it is intrinsically deceptive; the conflict is whether the diversity of interpretation that metaphor provides is an asset or an obstacle or whether there are occasions when it is both. Armantrout doesn’t avoid metaphor in her poetry and, in spite of the evident suspicion and conflict it creates for her, she recognises that ‘we all live inside metaphor. That’s what it is to be human [and] it helps to be aware of it’.[49] Instead, Armantrout attempts to remain aware of her metaphors and to push their boundaries, and this attentiveness is one of the ways she moves beyond her suspicions and brings the ‘underlying structures of language and thought into consciousness’.[50] Armantrout has repeatedly acknowledged the ubiquitousness and inescapability of metaphor in her interviews, poetry and prose, arguing that it is impossible to ‘believe that language can be divorced from thought and words from their histories’;[51] a belief that concurs with George Lakoff and Mark Johnson whose work on conceptual

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[47] J. Geary, *I Is an Other: The Secret Life of Metaphor and How It Shapes the Way We See the World*, (HarperCollins, 2011).
[48] Armantrout, 'Visibility', in *Veil: New and Selected Poems*, p. 82.
[49] Rae Armantrout, interviewed by Natalia Carbajosa, *Jot Down Contemporary Culture Mag,* in <http://www.jotdown.es/2012/03/an-interview-to-rae-armantrout/> [accessed 7 May 2015].
[50] Armantrout and Press, p. 15.
[51] Armantrout and Press, p. 13.

metaphor claims that 'metaphor is pervasive in everyday life, not just in language, but in thought and action'.[52] Their work remains influential and must be recognised in any study of metaphor, though other cognitive theories that follow, such as those of Gilles Fauconnier and Mark Turner's, prove more appropriate in the analysis of Armantrout's poetry.

Along with the work done by Lakoff and Johnson, Armantrout's insistence that language has a role in shaping thought makes cognitive theories of metaphor highly appropriate for exploring this rhetorical device in her work. Cognitive metaphor theories remain relevant because there has been no criticism able to adequately contest the argument that 'poetic metaphorical expressions are not in language, but in thought'.[53] Rather, attention may be better given to directionality, as with Barbara Clow's consideration of Susan Sontag's landmark book *Illness as Metaphor*.[54] Although Clow addresses the limitations of Sontag's book, she does not deny the influence of lived experience on metaphor: 'metaphors possibly shaped illness experience, but illness experiences undoubtedly shaped the metaphors of cancer'.[55] Clow raises some well-defended oppositions and highlights important concerns about the role language plays in shaping thought and experience, in this instance its role can be more sinister, just as Armantrout's 'dark' suggests. Clow continues that Sontag's book 'excited considerable interest among scholars, contributing a new conceptual framework to the burgeoning movement to study patient experiences, illness narratives, and health culture'.[56] This interest took up Sontag's conclusion that illness metaphors have a definite and negative influence on the course of the disease itself. Armantrout's poetry challenges and explores such questions of how metaphor may influence thought, how experience creates metaphors, and the dangerous and deceptive nature of metaphor.

The idea that metaphor directs thought is not new and dates back to Aristotle who called it a persuasive addition to language, which could subtly engage particular thoughts. 'Thus, it is clear that if one composes well there will be an unfamiliar quality and it escapes notice and

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[52] George Lakoff and Mark Johnson, *Metaphors We Live By*, (Chicago, Ill. ; London: University of Chicago Press, 2003).
[53] A. Ortony, *Metaphor and Thought*, (Cambridge University Press, 1993), p. 203.
Ortony argues that the major shift from classical metaphor theory (language centred) to contemporary metaphor theory (thought centred) originated in the work of Michael Reddy, who demonstrated that metaphor is indispensable in ordinary everyday English, not only poetic or figurative language. Ortony continues with examples of some of the shaping arguments of contemporary theory, pp. 207–248.
[54] S. Sontag, *Illness as Metaphor*, (Vintage Books, 1979).
[55] Barbara Clow, 'Who's Afraid of Susan Sontag? Or, the Myths and Metaphors of Cancer Reconsidered.', *Social History of Medicine*, 14. 2 (2001), 293–312.
[56] Ibid, 293–312 (pp. 293–294).

will be clear. . . Metaphor especially has clarity and sweetness and strangeness, and its use cannot be learned from anyone else.'[57] Aristotle touches on the personal network of meaning created by metaphor use, a network utilised heavily by Armantrout, but although he viewed metaphor as an effective tool, classically it was still associated far more readily with language than thought. However, the *'strangeness'* of metaphor and its ability to 'escape notice' remains a feature that many philosophers and theorists draw attention to. Donald Davidson terms metaphor 'the dreamwork of language'[58] claiming that it is not subject to a system of rules, which makes it difficult to determine. Max Muller also took up the perilous nature of metaphor in his nineteenth century *Lectures on the Science of Language,* referring indirectly to metaphor as a 'disease of language'[59] owing to the 'artificial' path travelled in the creation of metaphorical meaning. These apparently concerning features of thought manipulation and confusion are repeated across a broad spectrum of academic and professional expertise including: the philosophy of science, cognitive linguistics and more recently, law. Eugene Volokh terms metaphor 'the slippery slope' of writing and argues that metaphors 'start by enriching our vision and end by clouding it'.[60] William Carlos Williams, an influence on Armantrout's poetics and a poet credited with being a major influence in the American modernist literary movement, also treats metaphor with a degree of caution and suspicion by writing about his unease of figurative language in the critical 'Prologue' to *Kora in Hell.*[61] Williams warned of its 'easy lateral sliding' and continuing that the true value of style might be found in 'that particularity which gives an object a character by itself'.[62]

Metaphor has not been easy to escape from for poets like Williams and Armantrout who harbour such suspicions, but what is evident in Armantrout's poetry is a more radical engagement with it that forms 'new combinations of words as free as possible from their old associational weights',[63] an engagement that Williams would surely have approved of. Freeing words as far as possible from their associations appears to be an attempt to make language more objective in the exploration of problems and questions. Metaphor is primarily

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[57] Aristotle, Trans. George A. Kennedy *On Rhetoric: A Theory of Civic Discourse* (Oxford: Oxford University Press 2007), p. 1405a.
[58] Donald Davidson, *The Essential Davidson*, (Oxford: Clarendon Press, 2006), p. 209.
[59] F.M. Müller, *Lectures on the Science of Language: Delivered at the Royal Institution of Great Britain in April, May, & June, 1861*, (Longman, Green, Longman, Roberts, & Green, 1864), p. 11–12.
[60] E. Volokh, (2003), "The Mechanisms of the Slippery Slope" (PDF), *Harvard Law Review* (Harvard Law Review, Vol. 116, No. 4).
[61] W.C. Williams and M.L. Rosenthal, *The William Carlos Williams Reader*, (J. Laughlin, 1966).
[62] Williams and Rosenthal.
[63] H. James H. ed. East, *The Humane Particulars: The Collected Letters of William Carlos Williams and Kenneth Burke*, (University of South Carolina Press, 2003).

used to understand something abstract—its myriad circular correlations, though seemingly irreconcilable, become one of the principle reasons that scientists and poets view metaphor as indispensable, especially when talking about theoretical concepts or the creation of novel predictions. Metaphor's dual position as a feature detrimental to unobstructed language and thought, alongside its fundamental role in assisting abstract reasoning, accounts for some of the difficulties faced when trying to define not only what it is, but additionally how it works.

Armantrout's engagement with scientific visions and her unexpected use of metaphor are representative of questions being asked in contemporary poetry more generally. Stephen Fredman notes that Language poets are using their work as investigations, but, as will be shown, contemporary American poetry on a much larger scale moves towards a space between 'literature and factual or theoretic discourse'.[64] Scientific visions and poetry are bound by metaphor, which consistently appears as an indispensable feature of both literal and non-literal language. Paul De Man underlines the opacity of metaphor and the challenge of definition arguing that other forms of discourse, including philosophy, are 'dependent on figuration to be literary and … all literature is to some extent philosophical'.[65] This shared space, where theoretical and literal language both employ figurative language, is the location at which pivotal moments in literary history and cognitive science have directed metaphor theory to; consequently, it is the location where discussion about scientific metaphor in contemporary American female poetry must take place.

Literary critics, philosophers, and cognitive scientists, such as Gilles Fauconnier, Mark Turner, Paul de Man, Max Black, I. A. Richards, and Roman Jakobson, have argued that the line between literary and non-literary discourse is no longer distinct. Research from the twentieth century and beyond has 'demonstrated that metaphor is as much a construct of supposedly literal language as it is of literary language'.[66] As Armantrout says, 'we all live inside metaphor',[67] but we still do not fully understand the mechanisms of this existence. The problems she simultaneously experiences and delivers through her poetic investigation of figurative language have not been adequately answered by research in either science or

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[64] Stephen Fredman, *Poet's Prose: The Crisis in American Verse*, (Cambridge: Cambridge University Press, 1990), p. 136.
[65] Paul de Man, 'The Epistemology of Metaphor', *Critical Inquiry*, 5. 1 (1978), 13–30, (p. 30).
[66] Monika Fludernik, Donald C. Freeman, and Margaret H. Freeman, 'Metaphor and Beyond: An Introduction', *Poetics Today*, 20. 3 (1999), 383–96 (p. 384).
[67] Rae Armantrout, interviewed by Natalia Carbajosa, *Jot Down Contemporary Culture Mag*, in <http://www.jotdown.es/2012/03/an-interview-to-rae-armantrout/> [accessed 7 May 2015].

poetry. Discoveries in cognitive science and non-literary analysis of metaphor have challenged previously held ideas from literary criticism to the point of collapse. Unsolved problems remain in the analysis of metaphor—one of the most influential and ubiquitous tools in the creative conception of our world; these problems begin even at the most basic level of its definition and continue in issues with reliability, non-linear meaning, objectivity and how relationship between language and experience is structured.

Armantrout's poetry creates further conflict by including what is often for herself and her readers the less familiar language of science. By using a second language Armantrout activates an unknown system of rules and associations. Just as poetic language gathers historical and semantic associations that can be manipulated by poets, so too does scientific metaphor and expression. Metaphors and expressions used by scientists are, at times, subject to strict usage rules; some are assimilated into a standard vocabulary so that they are no longer processed via the same psychological route at all. When poets and scientists use metaphor they are adding to a continually growing body of knowledge, following a series of footsteps left by the shared evidence of their predecessors. This evidence is intricately bound to the historical and cultural development of their individual fields; when a poet uses the language and visions of science, they are activating a foreign set of associations to create a poetic interlanguage. Armantrout's departure from the expected use of metaphor in poetry is partially related to changes that have been occurring in metaphor theory[68] since the twentieth century; long held beliefs from literary criticism have been destabilised largely by research from cognitive science, which has created new questions for poets in the process.

1.3 Conceptual Metaphor and Interlanguage

There has been some discussion around conceptual metaphor in Armantrout's poetry, yet it is Gilles Fauconnier and Mark Turner's work on Conceptual Integration Networks that provides the most promising structure for the analysis of Armantrout's writing, because of her extended and 'anti-metaphors'.[69] Critics Andrew Christopher West and Stephanie Burt both touch on conceptual metaphor in Armantrout. West draws attention to the 'anti-metaphors'

[68] See Appendix 1 – which provides a manageable structure for navigating metaphor theory by grouping types of metaphor theory and the corresponding criticism into loose categories: comparison theories, interaction or sense-shift theories and conceptual theories.
[69] Andrew Christopher West, 'Metaphor in Rae Armantrout's "Veil"', *Amerikastudien / American Studies*, 56. 3 (2011), 403–23.

she creates but fails to recognise this as a deliberate experiment. Burt highlights the existence of conceptual metaphor in Armantrout's poetry, taking up Lakoff and Johnson's suggestion that she uses metaphor in the production of 'small spacial stories',[70] yet makes no examination on the cognitive effects this might have on reader or meaning. Fauconnier and Turner write that: 'in a conceptual integration network, partial structure from input mental spaces is projected to a new blended mental space which develops dynamic (imaginative) structure of its own'.[71] In Armantrout's poetry images and themes, that at first appear disparate, join to form networks blended by their repetitions and revisions along with understandings projected upon them by poet and reader.

Fauconnier and Turner argue in their paper 'Conceptual Integration Networks' that studies focusing on cross-domain mappings in metaphor and analogy, such as those on conceptual metaphor theory, do not by themselves satisfactorily explain the data that arises: 'as we move through the data that involves both cross-space mapping and conceptual integration, we will remark that much of it is neither metaphoric nor analogical'.[72] According to Fauconnier and Turner, this is because metaphorical projection is partly responsible for the creation of meaning and reasoning. Armantrout's incomplete metaphors pull meaning from science and poetry over the course of her work creating different spaces that are subject to individual structures of meaning, parallel to the process of conceptual blending. Fauconnier and Turner state that conceptual blending is when 'central inferences, emotions, and conceptualisations, not explained in currently available frameworks, [are] constructed dynamically in a new mental space [that] draws selectively from different and incompatible input frames to construct a blended space that has its *own emergent structure* and that provides central inferences'.[73] [Emphasis added]. Metaphor in Armantrout becomes hyper-extended before being revised and compressed, acquiring its own complex meaning structure over the course of the poetry.

Armantrout's hyper-extension of metaphor works symbiotically with scientific vision to create a third form, a poetic 'interlanguage'—a term coined by linguistics professor Larry

[70] Burt.
[71] Lynn Nadel, *Encyclopedia of Cognitive Science*, (London: Nature Publishing Group, 2003), v. 1.
[72] Gilles Fauconnier and Mark Turner, 'Conceptual Integration Networks', *Cognitive Science*, 22. 2 (1998), 133–87 (p. 135).
[73] Fauconnier and Turner, p. 136.

Selinker[74] in his account of second language acquisition. An interlanguage is a language that falls in a space between the first and target language. In the case of Armantrout's poetry the first language, poetry, acts as the source, which is then mixed with the second target language, science, to create something new. Selinker continues, 'when learning a second (target) language the learners build an individual language system different from their first language'.[75] Despite notable exceptions for the most part, scientists and poets do not share the complexities of their different languages in common; this results in poets applying the usage patterns of poetic language, whilst simultaneously extending patterns from scientific language, and creating a new fragmented discourse. In Armantrout's poetry the different languages of science and poetry are used in the creation of a new poetic interlanguage, distinct from the languages that have informed it. Patricia Fara writes 'foreign ideas are rarely imported intact from other cultures',[76] and poets who use the visions given to them by science, like scholars encountering new ideas before them, 'apply their own criteria of significance for fitting them into their conceptual framework'.[77] Poets undertaking to use and learn the second language of science, as with any second language acquisition, face difficulties in the form of overgeneralisations, omissions, and transfer errors. These difficulties are passed to readers who have to learn new rules, as well as rules that are changed and removed. Readers face a restructuring of systems: systems of metaphor and systems of language. Science in Armantrout represents a language largely foreign to the poet and often her readers. Selinker's interlanguage provides an ideal platform on which to structure analysis of Armantrout's poetry, which incorporates the languages and visions of both science and poetry. It makes several useful propositions suggesting that language is permeable and highly susceptible to influence from the outside, and that interlanguage is affected by learner conscious attempts to control it. Such propositions are particularly relevant to Armantrout who attempts to interrogate and manipulate language, while expecting her readers to take an active role in meaning creation. Interlanguage marked a catalyst for linguistic research into the psychological processes involved in using and learning different languages, so offers a fitting segue to cognitive theories of metaphor. The focus on psychological processes involved in the creation of poetic interlanguage will assist in finding

[74] Rod Ellis, *The Study of Second Language Acquisition*, (Oxford: Oxford University Press, 1994), p. 350–352.
[75] Ellis, p. 350–352.
[76] Patricia Fara, *Science: A Four Thousand Year History*, (Oxford: Oxford University Press, 2009), p. 56.
[77] Fara.

out what different cognitive effects are produced in Armantrout's manipulation of language and of scientific vision.

1.4 Poetry and Science: Interactions and Criticism

Many contemporary poets bring scientific visions into poetry as a way of making sense of changing pictures of language and self, as well as the physical and mental environment these are situated in. Recent research in cognitive neuroscience has been challenging previous assumptions on how the brain functions anatomically and how it experiences and processes language. An increasing number of studies argue that there is 'robust biological evidence' for neural theories of language which detail 'how many brain functions (including emotion and social recognition) work together to understand and learn language'.[78] Such studies also argue that meaning, as constructed through language, is embodied ideas which, as will be shown, are also taken up in metaphor theory. Several notable studies aim to move past 'territorial disputes' on whether ideas of self or consciousness are 'the property of scientists or philosophers',[79] such as *Neuroscience and Philosophy: Brain, Mind, and Language*[80] and *What Makes Us Think? A Neuroscientist and a Philosopher Argue about Ethics, Human Nature, and the Brain*;[81] a dispute which is taken up by contemporary American poets who use the poem as a location in which subjectivity and objectivity can co-exist in order to explore scientific vision alongside lived experience. This continued and increasing absorption of scientific vision and language into poetry has led scholars, such as John Holmes, to assert that the divide between the arts and sciences, which C.P. Snow famously proposed in his 1959 Rede Lecture,[82] has 'rarely been applicable to modern poets'.[83] Yet this opinion seems optimistic considering that a significant amount of contemporary poetry exhibits a collision between scientific and poetic vision; that is despite the fact that poets can and do embrace science, exploring the visions it provides and welcoming expanding horizons, the nature of the relationship is still one of *collision*. This conflict comes from the different languages

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[78] Jerome Feldman and Srinivas Narayanan, 'Embodied Meaning in a Neural Theory of Language', *Brain and Language*, 89. 2 (2004), 385–92 (p. 385, p. 390).
[79] Mary Midgley, *Science and Poetry*, (London: Routledge, 2001), p. 81.
[80] Maxwell Bennett and others, *Neuroscience and Philosophy: Brain, Mind, and Language*, (New York / Chichester: Columbia University Press, 2009).
[81] Jean Pierre Changeux and Paul Ricoeur, *What Makes Us Think?: A Neuroscientist and a Philosopher Argue About Ethics, Human Nature, and the Brain*, (Princeton / Oxford: Princeton University Press, 2002).
[82] C.P. Snow and S. Collini, *The Two Cultures*, (Cambridge: Cambridge University Press, 2012).
[83] John. Holmes, *Science in Modern Poetry: New Directions*, (Liverpool: Liverpool University Press, 2012).

each uses to communicate in: one apparently more concerned with communicating in objective and unambiguous language, in order to communicate more efficiently with the larger scientific community, and the other less constrained by epistemological rules. Consequently, a divide between science and poetry remains a substantive presence in contemporary poetry.

Armantrout's use of scientific visions demonstrates her desire to engage with the 'provocative things to imagine [which] leaves us with more questions than answers' that science offers. Gillian Beer notes that scientists, and by extension poets as individuals living in society, 'draw on the resources of the society they inhabit and the historical period in which they live…[they] have access to the shared metaphors and arguments of the time'. That is, scientists and poets are shaping and being shaped by the same cultural fictions and assumptions of their particular moment. Contemporary poets who engage with science are reflecting the dominant role it plays in shaping our understanding of reality and in the construction of societal rules and values; as John Holmes notes, over the last twenty-five years 'poets and scientists have been taking a more and more lively interest in each other's work and working methods'. Despite this interest, Beer argues that serious difficulty arises from the conflict of combining 'forms of knowledge [that] do not readily merge', later asking 'how do we avoid collapsing the differences between science and poetry in our eagerness to explore their interactions?' The difference between science and poetry is a question that Armantrout's poetry continually reforms by bringing their languages and visions together. She uses both difference and collision as another way to create tension in the overarching certainties offered in language she finds suspect.

Armantrout is not unique amongst her contemporaries in her desire to interrogate language and identity while engaging with scientific vision. Some notable contemporary American female poets who explore scientific visions and language in their poetry include Mei-Mei Berssenbrugge, Diane Ackerman, Alice Fulton, Jorie Graham, Elizabeth Bishop, Susan Howe, and Lyn Hejinian. Lynn Keller highlights the lack of recognition these female writers have received for their 'formative intellectual presences'[84] in the modelling of scientifically interested poetry, frequently known following Lyn Hejinian as a poetics of inquiry. Keller writes that 'for the most part it has been men… who have attained visibility as the theorists

[84] Lynn Keller, *Tulsa Studies in Women's Literature,* 21. 1 (2002), 133–36. (p. 133).

and spokespeople for this influential literary movement'.[85] This marginalised influence is also taken up in Ann Vickery's important work 'Leaving Lines of Gender: A Feminist Genealogy of Language Writing'.[86] Vickery seeks to 'recover and celebrate the work of women writers that she says are concerned with "interrogating the possibilities"'.[87]

Diane Ackerman, Alice Fulton and Jorie Graham, provide examples of poets who share Armantrout's interest in science and are among a group of contemporary poets whose work, following Lyn Hejinian, makes up a poetics of inquiry and contributes to what Lynn Keller calls 'an influential literary movement'.[88] Critics have responded to this movement in a number of ways; Pamela Gossin writes that poets, including Diane Ackerman, draw 'inspiration [from science] in both form and content',[89] noting the role such poets play as popularisers of scientific theory referring, in Ackerman's case, to 'late-twentieth-century planetary astronomy'.[90] In an interview with *Publishers Weekly* Ackerman says she finds it hard not to include science in her poetry: 'A critic once said that air foils, quasars, and corpuscles aren't the proper form of art. But to agree ignores much of life's fascination and variety. Writing, which is my form of celebration and prayer, is also my way of inquiry'.[91] Gossin is quick to identify the content that arises in poetry from science, writing that poets employ 'deep structural scientific metaphors and extended conceits, often creating vast fictional or poetic worlds in which they test and explore science's power and meaning'.[92] She observes the necessity, considering the changing face of 'conventional print literature' in the twenty-first century, of the evolution of verse forms and structures. Aside from stating the existence of new verse forms in a handful of poets, including Elizabeth Socolow, Siv Cedering, Richard Kenney, and Rafael Catala, Gossin fails to comment on the nature of these changes or the effect that the implicit objectivity, which enters the poetry along with scientific vision, has on form.

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[85] Keller, p. 133.
[86] A. Vickery, *Leaving Lines of Gender: A Feminist Genealogy of Language Writing*, (Wesleyan University Press, 2000).
[87] Vickery, pp. 6–7.
[88] Keller, p. 133.
[89] Roy Porter David C. Lindberg, Mary Jo Nye, Ronald L. Numbers, Katharine Park, Lorraine Daston, Theodore M. Porter, Dorothy Ross, *The Cambridge History of Science: Volume 5, the Modern Physical and Mathematical Sciences*, (Cambridge: Cambridge University Press, 2003), p. 102.
[90] Pamela Gossin, 'Living Poetics, Enacting the Cosmos: The Popularization of Astronomy in Diane Ackerman's the Planets: A Cosmic Pastoral', *Women's Studies*, 26. 6 (1997), 605–638, (p. 606).
[91] B.A. Drew, *100 Most Popular Nonfiction Authors: Biographical Sketches and Bibliographies*, (Libraries Unlimited, 2008), p. 7.
[92] David C. Lindberg. p. 103.

In Gossin's essay on Ackerman's *The Planets a Cosmic Pastoral* she highlights Ackerman's poetic observation, a frequent and certainly not new sentiment, that science's objective categorisation of phenomena cannot encompass all there is to know about it. In this assessment of Ackerman, Gossin does provide more detail on science's influence on the physical structure of her poetry, but the content she discusses does little to suggest the forceful interrogation of scientific language and vision that can be identified in the poetry of Armantrout. Ackerman's lyricism has been noted by critics like John Taylor who writes that she 'weaves intricate, colourful, often stunning linguistic tapestries', but also that her 'occasionally self-indulgent declarations' and 'exuberant yoking of nouns' 'blur the focus'; [93] a focus that Armantrout's Language-influenced poetry attempts to sharpen. Ackerman's desire to promote wonder is noted by both Taylor and Gossin as her poetry favours the wonder it finds in science over interrogation of the truth claims it offers. Her poetry focuses on an unfolding of science's visions rather than subjecting them, as Armantrout does, to their own processes of empirical observation and testing.

Useful commentary on scientifically interested poetry can be found in the criticism of Alice Fulton's work. Peter Middleton argues that Fulton 'speaks for many contemporary poets' in her remarks on her poem 'Cascade Experiment'. Fulton says, 'I often lift scientific language for my own wayward purposes. That isn't to say I play fast and loose with denoted meanings. I'm as true to the intentions of science as my knowledge allows'.[94] Fulton looks, as Lynn Keller argues, to 'the theories of contemporary science—especially quantum physics […] for means of reflecting current intellectual perspectives';[95] in making these reflections Middleton notes the 'poetic games' that she plays with 'scientific metaphor',[96] writing that she wishes to 'remain a technician of metaphor and [to] take hold of scientific information's rhetorical extravagance and then reason with it'.[97] This method, along with her attention to 'the sensual and tactile presence of language' which she calls "texture"',[98] moves her closer to Armantrout's Language-influenced poetry, though this is a classification she justifiably

[93] John Taylor, *Poetry*, 173. 2 (1998), 182–184, (p. 183).
[94] Peter Middleton, *Physics Envy: American Poetry and Science in the Cold War and After*, (Chicago / London: University of Chicago Press, 2015), pp. 18–19.
[95] Lynn Keller, 'The "Then Some Inbetween": Alice Fulton's Feminist Experimentalism', *American Literature*, 71. 2 (1999), 311–40 (p. 311).
[96] Middleton in David Herd, *Contemporary Olson*, (Manchester: Manchester University Press, 2016), p. 44.
[97] Peter Middleton, 'Strips: Scientific Language in Poetry', *Textual Practice*, 23. 6 (2009), 947–58.
[98] Sarah Jackson, *Tactile Poetics*, (Edinburgh: Edinburgh University Press, 2015), p. 71.

resists, saying she is 'neither a Language poet nor quite in the mainstream'.[99] Fulton's poetry often demonstrates a preoccupation with the relationship between individual and society and this relationship is explored through 'the polysemy of her line breaks and phrasing, the multiple voices, the playful and digressive movement, and the showy mixture of high and low culture' which 'violate[s] norms for contemporary lyric'.[100] It is the form of her poetry rather than the content which moves her to the edge of the 'mainstream'; as Middleton writes in his 2015 book *Physics Envy: American Poetry and Science in the Cold War and After* she is again a representative for many poets in her belief that 'a truly engaged and contemporary poetry must reflect'[101] the knowledge offered to us by science.

Jorie Graham shares Armantrout's interest in problems of self and rejection of linear narrative, interests that unavoidably shape her poetic engagement with science and explain her focus on how language shapes both the visible and invisible qualities of phenomena. Her materialisation of the self means, as Helen Vendler argues, that 'the instabilities of matter must now be assumed by the self and so any poem spoken in the voice of the material self must be an unstable poem, constantly engaged in linguistic processes of approximation'.[102] Graham unveils instabilities of self and narrative through her use of science, as Catherine Karaguezian argues in her 2014 book *No Image There and the Gaze Remains,* which is evident in her overarching interest in 'exploring the significance and repercussions of the poet's interaction with the visible world'.[103] Adelaide Morris argues that Graham uses her poem as a 'scientific experiment' and tries to 'think her way past'[104] the difficulties of measurement she finds. However, at other times, as Skillman argues in *The Lyric in the Age of the Brain* (2016), despite being 'committed to forging an empirically conscientious poetics that acknowledges meaningful correlations between the science of the mind and the experience of it', Graham rejects science when 'neurological interpretations of mind threaten to discredit the reality of the self'.[105] Like Fulton, Graham's overarching opinion appears to subscribe to the view that contemporary poetry should engage with scientific vision as her

[99] Keller, p. 311.
[100] L. Keller, *Thinking Poetry: Readings in Contemporary Women's Exploratory Poetics*, (University of Iowa Press, 2010), p. 47.
[101] Middleton, *Physics Envy: American Poetry and Science in the Cold War and After*, p. 51.
[102] Helen H. Vendler, *The Given and the Made: Strategies of Poetic Redefinition*, (Boston: Harvard University Press, 1995), p. 128.
[103] Catherine Karaguezian, *No Image There and the Gaze Remains: The Visual in the Work of Jorie Graham*, (New York: Taylor & Francis, 2014), p. 31.
[104] Robert Crawford, *Contemporary Poetry and Contemporary Science*, (Oxford: OUP Oxford, 2006), p. 147.
[105] Skillman, p. 208.

'thought experiments emerg[e] in the context of developments in modern and contemporary science'.[106]

A unifying feature in the criticism of contemporary poetry seems to be the idea of using the poem as a site for inquiry; even in Ackerman's less aggressive interrogation of scientific theory, poetry adds an interpretative layer in its unfolding of theory for her readers. Fulton and Graham both recognise the importance of entering into a dialogue with contemporary science questioning the visions it offers by relating it to embodied experience, which often refuses to correlate. Attentiveness to language in its structure on the page, and in how words themselves are unable to objectively describe phenomena, becomes increasingly important in contemporary poetry. Whether these 'linguistic tapestr[ies]' and 'textures' divert interest from scientific vision, or whether they call attention to how language shapes self and environment, is one reason why the relation these poets share with Armantrout in their engagement with science remains partial. Her particular method of poetic inquiry does not find straightforward unanimity with her contemporaries, though she takes the same concerns of language and inquiry forward in her poetry in the search for new questions.

A gradual rebalancing in the relationship between science and poetry is observable in criticism from the late twentieth century onwards, as it moves away from attempts to place value in one over the other and towards bigger ideas, such as the best way to build useful exchanges. *Contemporary Poetry and Contemporary Science* (2006), edited by Robert Crawford,[107] is one such book that takes an initial step by presenting 'instances where contemporary poets are attracted towards science and contemporary scientists are attracted towards poetry'.[108] *On Literature and Science: Essays, Reflections, Provocations* (2007) also presents, without detailed commentary, the 'connections between science and literature from a variety of authors'.[109] Despite evident progression the focus of a huge amount of criticism, particularly on the part of writers, is on finding similarity but, as Beer cautions, an eagerness to find resemblance does not always facilitate progress in the discussion. Middleton's book *Physics Envy* provides a helpful map of the post-war interactions between American poetry and science before taking up the poem as a site of inquiry through an interpretation of Charles

[106] Crawford, p. 151.
[107] Crawford.
[108] Crawford, p. 8.
[109] Philip Coleman, *On Literature and Science : Essays, Reflections, Provocations*, (Dublin: Four Courts Press, 2007), p. 9.

Olson's 'Projective Verse'. Middleton recognises the difficulty faced by poets and scientists of describing phenomena that have been subjected to previous classification by an 'incommensurability of different knowledges',[110] subtly shifting awareness to different truth claims and the different languages they are offered in.

These shifts towards inquiry and dialogue are observable in collections of critical essays and poetry anthologies alike. *Verse and Universe,*[111] a collection in which eighty contemporary American poets interact with scientific and mathematical ideas over the course of two hundred and fifty poems, provides an excellent example of the type of anthologies that were being produced towards the end of the twentieth century, but single author books of poetry dedicated to engaging with science are appearing with ever more frequency. *Verse and Universe* contributor Emily Grosholz reviews two such volumes: *Approaching Ice: Poems* by Elizabeth Bradfield (2010)[112] and *Darwin: A Life in Poems* by Ruth Padel (2012).[113] Grosholz notes that Bradfield mixes scientific definition with a love story, repeatedly 'refracting and multiplying'[114] many iterations of attempts to reach polar regions. Although Grosholz finds this method difficult at times, there are elements of Bradfield's method that shares parallels with Armantrout's continual reforming of questions. Moving on to Padel's book, Grosholz focuses on her use of language noting how she 'weave[s] taxonomy and precise botanical and zoological description into the poetry'.[115] The form in Padel diverges from Armantrout's often harsh collation of scientific and poetic vision, because the collaboration of language is being used to reflect successes of scientific collaboration which 'produc[e] the best and most lasting insights'.[116] Rather than posing questions, as Armantrout's poetry does, Padel's form subtly indicates her own conclusions on collaboration.

Alice Major's 2011 book *Intersecting Sets: A Poet Looks at Science*[117] offers a more recent collection of essays that takes a different approach to engaging with science, one not dissimilar to Armantrout, particularly in her desire to ask questions and the importance she

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[110] Middleton, *Physics Envy: American Poetry and Science in the Cold War and After,* p. 157.
[111] K. Brown, *Verse & Universe: Poems About Science and Mathematics,* (Milkweed Editions, 1998).
[112] Elizabeth Bradfield, *Approaching Ice: Poems,* (New York: Persea Books, 2010).
[113] Ruth Padel, *Darwin: A Life in Poems,* (New York: Random House, 2012).
[114] Emily Grosholz, 'Poetry in the Wild ', *American Scientist,* 100. May - June (2012), <https://www.americanscientist.org/article/poetry-in-the-wild> [accessed 1 June 2018].
[115] Grosholz.
[116] Grosholz.
[117] Alice Major, *Intersecting Sets: A Poet Looks at Science,* (Canada: University of Alberta Press, 2011).

places on uncertainty and doubt as she engages with the ideas of science, such as quantum uncertainty: 'the more you know about one quality, the less you know about the other'.[118] However, Major is quick to assert 'that she is neither a scientist nor a science writer, nor a literary critic or a philosopher in aesthetics',[119] leaving her free to explore her own motivation and the 'bright oddly shaped ideas [from science] that attract[t]'[120] her. Major focuses on the influence that language has on cognition writing that 'an apt new metaphor can literally reconfigure the brain',[121] later in the book suggesting that language and experience should and must merge in order to offer something fruitful to poetry, and that this must be done with an element of awareness. She writes: 'I make observations of my world. I move words into arbitrary combinations, testing them for sound, testing them for a connection to my observations. I let their connections echo through the net of memory I have spun over decades of learning'.[122] Though Major draws parallels to science in the 'density of events' versus our ability to describe them, it is in the shared enormity and impossibility of this task that places both poets and scientists in the same location; a recognition that marks a small yet progressive step forward in the debate.

1.5 Language Writing and Contemporary American Poetry

The influence of Language poetry is evident in the work of many contemporary American poets; Lyn Hejinian's book of collected essays on poetry *The Language of Inquiry*[123] crystallised what had been a growing concern amid contemporary American poets: the idea that the poem could be used as a way to 'find out what something is, or to find out what's happening'.[124] Yet, the idea that a poem could be used as a tool for inquiry can be traced to Lucretius, *On the Nature of the Universe,*[125] who used poetry as a way to emotively explore the rationality of scientific visions. In contemporary American poetry, the Language School

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[118] Major, p. 51.
[119] Robin Chapman, 'Quantum Metaphor', *American Scientist,* 100. May - June (2012), <https://www.americanscientist.org/article/quantum-metaphors> [accessed 1 June 2018].
[120] Major, p. xvi.
[121] Major, p. 42.
[122] Major, p. 234.
[123] Lyn. Hejinian, *The Language of Inquiry*, (California: University of California Press, 2000).
[124] Crawford, p. 149.
[125] M.R. Gale, *Lucretius,* (Oxford University Press, 2007). Lucretius first century poem, focused on what we would now call atomic physics. Richard Feyman considered his work of such importance that it caused him to note that: 'If, in some cataclysm, all of the scientific knowledge was to be destroyed and only one sentence passed on to the next generation of creatures, what statement would contain the most information in the fewest words? I believe that it is the atomic hypothesis… that all things are made of atoms' See: 'S. Gillespie and P. Hardie, *The Cambridge Companion to Lucretius*, (Cambridge University Press, 2007), p. 146.

of Poetry must be given some responsibility for this shift away from linear narratives and towards a more systematic poetry of inquiry as it asserted that the path from lived experience to written account was not linear. Silliman believes 'words are never our own. Rather they are our own usages of a determinate coding passed down to us like all other products of civilisation organised into a single, capitalist, world economy'[126] recognising the historical weights that words are endowed with. One of the founding members of the Language school, Lyn Hejinian, writes about her 'romance with science's rigor, patience, thoroughness, [and] the speculative imagination that informs it'.[127] Fulton, Silliman, and Hejinian demonstrate how language, form, and technique often predestine content and experience. Stephen Ratcliffe notes that Hejinian's work 'challenges us to ask questions...to re-examine what it means to read a text by means of constant and disarmingly sudden shifts in syntax and substance'.[128] Hejinian and Fulton expect the reader to take an active part in meaning creation, something that Armantrout also invites her readers to do as they navigate the gaps and meaning networks in her poetry. The active role required of the reader in Armantrout's poetry accounts for some of the reason that Marjorie Perloff and other poetry scholars label her a 'leading Language poet'.[129]

Armantrout has often been considered as one of the founding members of the West Coast Language group, though this association is more complicated than such a label indicates, in part due to 'her interest in lyric poetry';[130] nevertheless, there is little doubt that the doctrines of the Language school have had a huge influence on her poetics. The challenges she creates for readers reject the type of 'anaesthetic transformation of [words]'[131] that occurs as language is filtered down through the lived experience of capitalist society. The active inquiry that Language poetry promoted informed the work of Rae Armantrout and has added to the critical voice of contemporary American female poets. Rather than a reductive definition it is perhaps better to highlight some of the main objectives that, despite being somewhat absorbed by contemporary poetry, can still be considered as a motivating force behind Language focused poetry. As in the poetry of Ackerman, Fulton, and Hejinian,

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[126] Bruce. Andrews and Charles. Bernstein, *The L,* (Carbondale and Edwardsville: Southern Illinois University Press, 1984), p. 167.
[127] Holmes, p. 47.
[128] S. Ratcliffe, *Listening to Reading,* (State University of New York Press, 2000), p. 91.
[129] Majorie Perloff, *Differentials: Poetry, Poetics, Pedagogy (Modern & Contemporary Poetics)* (The University of Alabama Press, 2004), p. 244.
[130] 'Poem Present', in *Poem Present,* (UC San Diego, 2010), p. 107:35.
[131] Andrews and Bernstein, p. 125.

Language poetry moves towards a critical examination of both language and experience. As earlier highlighted with Fredman, 'investigations by contemporary poets no longer concern the boundary between prose and poetry but rather the boundary between literature and factual or theoretic discourse'. He continues that the 'orphic, bardic impulse' has always been paired with 'critical intelligence, for example, Poe and Emerson'.[132]

Fredman argues that criticism such as *The New Sentence*[133] from Ron Silliman, another founding member of the Language school, demonstrates the value of focusing on the 'sentence as a neglected unit of writing [and] how much poetic energy lies available within it for unleashing by poets who want to investigate the relationship between writing and truth'.[134] In Fredman's assessment of Silliman's book he highlights, where others fail to do so, that Language poets did not only seek to emphasise on language for its own sake and separate it from subjectivity, but to question its relationship with representations of 'truth'. He underlines the 'vigilant self-awareness that calls forth language and subjects it to an examination of its mediatory function'[135]—a self-awareness evident in all of the poets discussed and both they and Language poetry continuously dismantle the self. In an interview with Lee Bartlett, Michael Palmer says 'I'm not interested in *myself*—that's just a guy who sits here drinking coffee … a self that is transformed through language, however, interests me'. [136] Palmer notes the longevity of a poetry that the reader is already included in due to a de-personalised expression of experience through an already shared language. One of the main interests of the Language school was writing attentive to language and 'ways of making meaning that takes for granted neither vocabulary, grammar, process, shape, syntax, program or subject matter'.[137] Language poetry remains aware of the linguistic, cultural, and semantic stressors that impact it more than the voice or the individual experience of the poet writing it.

There is little room for doubt that in contemporary American female writing, scientifically interested poetry is being used as a method of inquiry; the language and metaphors of science are being employed to bring an empirical and objective lens into poems. As Hejinian states, poets are not only concerned with techniques but an 'attentiveness to the political and ethical

[132] Fredman, p. 136.
[133] Ron. Silliman, *The New Sentence,* (Michigan: Segue Foundation, 1987).
[134] Fredman, p. xi.
[135] Fredman, p. xi, p. 136.
[136] Lee Bartlett, 'What Is "Language Poetry"?', *Critical Inquiry,* 12. 4 (1986), 741–52 (p. 745).
[137] Andrews and Bernstein, p. ix.

dimensions of language'.[138] A shared recognition of the bilateral journey between language and experience has steadily grown in contemporary American poetry and the wider culture more generally. There has always been an historical correlation with how people understand their lived experience and the way that they contemplate and explore this through poetic expression and scientific knowledge. Even with a rigorous scientific method of formulating a question—a hypothesis, and testing this by experiment, 'conceptions of how the universe *ought* to function have often overridden the evidence provided by observation'.[139] Poetry can and does affect the way that we think and *ought* to think about the moment that we live in. The cultural impact that poetry has makes up one layer of the symbiotic relationship between time, space, culture and scientific knowledge.

1.6 The Historical Relationship Between Science and Poetry

Key moments in the relationship between science and poetry are easier to identify by examining poetry from corresponding periods when both scientific understandings of our universe and poetry underwent radical change. It is not clear which direction these paradigm shifts began in—though doubtless some scientists and poets would claim responsibility—but for the time being it is enough to observe that there were changes in both scientific knowledge and poetic expression and what these changes were. As a philosopher of science, Patricia Fara observes that knowledge gathered from empirical observation can take time to change the accepted conceptions in the society of the time. For example, the adoption of Aristotelian ideas in Renaissance culture and poetry, according to Aristotelian science, objects remained in fixed places unless they were forced to move; everything had a proper place including the earth at the centre of the universe. Beyond the earth other spheres existed including a divine realm. The universe, according to Aristotle, was law-governed and he told us 'what time and space is, what the cosmos is, what things are made of and what kind of laws those things obey'.[140]

In the Renaissance period, poetry was repositioning God's place in relation to man and the universe; at the same time the Copernican revolution was trying to move the universe from a geocentric to a heliocentric model. John Donne's poem 'Goodfriday, 1613 Riding Westward'

[138] Hejinian, p. 31.
[139] Fara, p. 24.
[140] L. Smolin, *The Life of the Cosmos*, (Oxford University Press, 1999), p. 5.

provides an example of some of the uncertainties and questions, which the changing map of the universe and society were raising for poets:

> Let mans Soule be a Spheare, and then, in this,
> The intelligence that moves, devotion is,
> And as the other Spheares, by being growne
> Subject to forraigne motion, lose their owne,
> And being by others hurried every day,
> Scarce in a yeare their naturall forme obey:
> Pleasure or businesse, so, our Soules admit
> For their first mover, and are whirld by it.
> Hence is't, that I am carryed towards the West
> This day, when my Soules forme bends toward the East.
> There I should see a Sunne, by rising set,
> And by that setting endlesse day beget;
> But that Christ on this Crosse, did rise and fall,
> Sinne had eternally benighted all.
> Yet dare I'almost be glad, I do not see …
> That spectacle of too much weight for mee.
> O Saviour, as thou hang'st upon the tree;
> I turne my backe to thee, but to receive
> Corrections, till thy mercies bid thee leave.
> O thinke mee worth thine anger, punish mee,
> Burne off my rusts, and my deformity,
> Restore thine Image, so much, by thy grace,
> That thou may'st know me, and I'll turne my face.[141]

From the first line Donne employs not the Copernican cosmology of his own time, but a Ptolemaic image of the universe as developed by Aristotle. Scientific knowledge and man's place within a geocentric construct is given primary position in the poem. In the first part of the poem the 'Spheares' or 'Soules' change trajectory according to the Aristotelian system—this can only happen by the movement of other celestial spheres. Donne's sphere is 'Subject to forraigne motion' and is moved from its correct path. Ludmilla Makuchowska notes that at the time of writing, Donne 'must have known that this theory had only been introduced to

[141] H. Woudhuysen and D. Norbrook, *The Penguin Book of Renaissance Verse: 1509-1659,* (Penguin Books Limited, 1993), p. 41.

camouflage ostensible mistakes in the all-encompassing paradigm'.[142] These mistakes had not accounted for observable phenomena and the corresponding debates in science regarding movement not only caused contentions for poets, but also 'affected the course of future physics'.[143] Donne uses historical rather than contemporary scientific constructs, which he knows to be incorrect. This conflict is a reflection of his individual discord—he is riding towards the west whilst his mind and soul 'bend toward the East'. Gossin's view is that Donne displays an awareness that 'the cosmic image is changing' and he is at times 'confused and even fearful'.[144] Donne's poem is written at a stage in which beliefs are suspended between old and new; he says '*Let* man's soule be a spheare' putting, as Chambers argues, his case in suppositional form 'to explore the possibilities'.[145] This moment of tension between science and poetry offers a meeting place—the point at which scientific vision is not fully embraced by either scientists or poets and where the poem becomes an experiment in the subjective and individualistic implications of a new cosmic vision.

Romanticism in poetry was partially a reaction to the 'dull catalogue of common things'[146] that poets felt resulted from science's rationalisation of nature. The gap between science and poetry widened, provoking a forceful response from Romantic poets who answered what Blake called science's 'dismal steel'[147] with their own 'glitt'ring' vocabulary:

> 'A glitt'ring streamlet of ambrosial dew!
> My Phaon smiles! the rich carnation's hue,
> On his flush'd cheek in conscious lustre glows,
>
> While o'er his breast enamour'd Venus throws
> Her starry mantle of celestial blue!'[148]

One of the first Romantic poets, Mary Robinson, wrote in her 1796 poem 'Sappho and Phaon: In a Series of Legitimate Sonnets'[149] of Sappho's love for an unfaithful boatman.

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[142] L. Makuchowska, *Scientific Discourse in John Donne's Eschatological Poetry*, (Cambridge Scholars Publisher, 2014), p. 17.
[143] Fara, p. 95.
[144] P. Gossin, *Encyclopedia of Literature and Science*, (Greenwood Press, 2002), p. 29.
[145] A. B. Chambers, 'Goodfriday, 1613. Riding Westward the Poem and the Tradition', *ELH*, 28. 1 (1961), 31–53.
[146] J. Keats, *The Works of John Keats: With an Introduction and Bibliography*, (Wordsworth, 1994), p. 188.
[147] William Blake and Alicia Ostriker, *The Complete Poems*, (London: Penguin Books Limited, 1977).
[148] Ibid, Sonnet XII.

Sappho rejects the futility of 'reason' and 'philosophy' but Robinson is recognised for her interest in rationality and women's rights to education, indicating conflict between subjectivity and reason. Another analysis of this sonnet has argued that the underlying 'gesture is an attempt to achieve "mutual recognition" the act of recognising or being recognised by the other'.[150] The 'mutual recognition' in this case is between reason and emotion, two attributes readily associated with science and poetry.

Just as contentions over planetary motions in the Renaissance period influenced future physics, words such as 'rapt', 'glitter', and 'starry' have gathered weight on their journey through the poetry of Blake, Wordsworth, Keats, Robinson, and Shelley, becoming etymological points on a poetic map. Contemporary poets are able to draw on canonical poetic language by using words, which carry specific historical and poetic associations. This idea is one clearly recognised by the Language poets whose 'words are never [their] own'[151] and by Armantrout, whose rejection of 'one true path'[152] echoes the distaste the Romantics felt when pioneers like Bacon asserted that science was the only 'image of truth'.[153] It wasn't reason itself that the Romantic poets vehemently rejected, but the *language* that reason was being given in. Mary Midgely writes, 'it was not the romantics who invented this alarming picture of science as a crude and aggressive conqueror … but the first champions of modern science themselves'.[154] Bacon's language was that of control and 'victory' and he wrote frequently that science must 'bend' and 'subdue'[155] nature.

These reactions in poetry occurred as Newton was demolishing traditional views by removing the centre and replacing it with absolute time and space; you could say where an object is absolutely and objects had absolute motion, but only in relation to the fixed framework of space, not other objects. Lee Smolin writes that the visions of science and the societal structure of the eighteenth and nineteenth century lie parallel: 'atoms moving individually, their properties defined by their relations to a fixed and absolute structure, that is identified with God, interacting via absolute and immutable laws that apply equally to all'.[156] Locke too

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[149] J. Wordsworth, *The Penguin Book of Romantic Poetry*, (Penguin Books Limited, 2005).
[150] J. Lustig and New York University, English, *The Modern Female Sonneteers: Redressing the Tradition*, (New York University, 2007), p. 84.
[151] Andrews and Bernstein, p. 167.
[152] Leddy and Armantrout.
[153] Frances Bacon and A.S. West, *Bacon's Essays*, (Cambridge: Cambridge University Press, 2015).
[154] Midgley, p. 41.
[155] Francis. Bacon, *Essays*, (Cosimo Classics, 2007), p. 101.
[156] Smolin.

was proposing that individuals had absolute rights, but these rights were independent of other individuals: 'Men being … by nature all free, equal and independent … [cannot] be subjected to the political power of another without his own consent'.[157] Man, according to Newton, Bacon, Locke, and the Romantic poets, had a new place in the external world because there was a new emphasis on the inner world of the individual, which was atomised in Romantic poetry. The conflict in language used by scientists and poets in the Romantic period is pivotal in changing considerations of science by poets and evidences another historical recognition of language shaping thought. Before turning to the Internet driven twenty-first century and the deceptive flow between poetry, culture and science that poets like Armantrout uncover, another major collision that changed the shape of poetry and science grew from literary modernism which began to explore ideas that life, nature, and the mind had a self-organised structure and were relational. The work of Freud, Mach, Darwin, and Einstein irreversibly changed how reality was seen. Einstein's theories were arguably the most instantaneous catalyst and his work sent ripples out into all areas of culture and academia; he 'became a world-renowned celebrity overnight'.[158]

One of the most significant contributions to both the poetry and criticism of the modernist period came from T.S. Eliot. Eliot's poetry, both consciously and unconsciously, played with the concepts of time and reality offered by science during his time, but it is perhaps his most famous essay 'Tradition and the Individual Talent'[159] in which he embraces the language of science and its new relational ideas: 'No poet, no artist of any art, has his complete meaning alone. His significance is … his relation to dead poets and artists … you must set him, for contrast and comparison, among the dead'.[160] Eliot believed that the influences of an individual's society left footprints in their poetry, directly or indirectly, and he distanced himself from Blake's contempt of science, dismissing him 'as the artist who is unwilling or unable to collaborate'.[161] Eliot also adopted the language of science applying scientific metaphor to poetic methods of composition: 'when the two gases previously mentioned are mixed in the presence of a filament of platinum, they form sulphurous acid. This combination

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[157] C.W. Morris, *The Social Contract Theorists: Critical Essays on Hobbes, Locke, and Rousseau*, (Rowman & Littlefield Publishers, 2000), p. 121.
[158] Brian Greene, *The Fabric of the Cosmos: Space, Time and the Texture of Reality*, (Penguin Books Limited, 2005), p. 262.
[159]Thomas Stearns Eliot, *The Sacred Wood: Essays on Poetry and Criticism*, (London: Methuen & Company, Limited, 1950).
[160] Eliot, p. 49.
[161] J.S. Brooker, *Mastery and Escape: T.S. Eliot and the Dialectic of Modernism*, (University of Massachusetts Press, 1996), p. 72.

takes place only if the platinum is present … the mind of the poet is the shred of platinum'.[162] Eliot felt that this scientific metaphor was appropriate because in his ideal vision of poetry the recognition of historical relations and depersonalisation meant that poetic expression could 'approach the condition of science'.[163] His ideas move towards the keen awareness of language and the removal of 'self' at work in contemporary American female poetry.

Though some poets, including Eliot, welcomed and explored the objectivity and visions of science others, including W.B. Yeats, felt that the objectivity of science attempted to offer only one point of view and was detrimental to the mysterious act of poetic creation. Yeats 'like Blake and Keats before him cried defiance to Newton and his scientific-minded descendants',[164] highlighting one of the major conflicts in poetry ever since this point. Even for poets more amenable to new realities offered by science, the perceived loss of mystery or the reduction of poetry's power to uncover that part of reality that cannot be literally 'seen' remains in jeopardy. A poetic response to science is rarely simple, but perhaps the most useful conversation between science and poetry lies somewhere close to Ezra Pound's attempts to 'create a poetics informed by the disciplines of science',[165] and the 'accurate mystery'[166] that Bell believes is Aldington's accidental definition for the ambitions of modernist poetry. Others since Bell and Aldington have recognised too that the invisible belongs to science—Daniel Tiffany writes 'the innate obscurity of matter in the history of physics, like the inscrutability of things in lyric poetry betrays the inescapable role of language in depicting the non-empirical qualities—the invisible aspect—of material phenomena'.[167] Armantrout investigates the different types of knowledge that poetry can produce and who, as Hejinian notes, 'preserves a sense of otherness'.[168] This preservation is clear in Armantrout's rejection and disruption of linear meaning, whether provided by science *or* poetry, and is an objective of her poetics as well as being a key feature of the evolving relationship between scientists and poets. This thesis will move through Armantrout's poetry chronologically as it tracks the origins and development of her unique poetics; the journey is a circular one as it follows the maturation of a poetic method which,

[162] Eliot, p. 54.
[163] Eliot, p. 53.
[164] Charles I. Glicksberg, 'William Butler Yeats and the Hatred of Science', *Prairie Schooner,* 27. 1 (1953), 29-36 (p. 29).
[165] Holmes, p. 17.
[166] Holmes, p. 194.
[167] D.N. Tiffany, *Toy Medium: Materialism and Modern Lyric*, (University of California Press, 2000), p. 6–7.
[168] Hejinian.

once established, returns to the beginning to revisit the same questions in light of new information.

1.7 Thesis Outline

Chapter Two focuses on Armantrout's early poetry up to the transitional moment of *Versed.* It asks why her earlier poetry often represents a search for narratives of origin and why these are then subject to deconstruction and destruction. It follows the beginnings of Armantrout's mistrust of language, which develops from the 'slither and doubleness'[169] she finds in words themselves and asks what effect this mistrust has on her poetry. It examines how Armantrout's early poetry questions the answers proposed by science and religion for the origins of our universe and the language they are given in, and why she subsequently presents their discourse as a mythic and cosmogenic one. Armantrout's early poetry explores personal origins in relation to their growth from inescapable links to specific points in culture, space, place, and familial relations. Armantrout's early poetry questions the validity of single origin explanations and whether this is the reason she identifies a gap between experience and explanation and continues to question how Armantrout uses metaphor in the exploration of this gap. The chapter examines Armantrout's cycle of creation and destruction and what her reasons might be for this cycle. It considers how Armantrout utilises the different languages and visions of science and poetry and what this means for her readers.

Chapter Three focuses on *Versed* and asks what the conflict between Language and lyric does to the content and structure of Armantrout's poetry. It asks what this reveals about the individual and collective and how these concerns are evident in the poetry. It observes the difficulty encountered in categorising Armantrout as either a lyrical or Language poet and asks if this is a contributory factor to her particular style and what the resulting consequences are on form, meaning and language. The chapter identifies moments of Language and lyric in her poetry and how these influences help Armantrout achieve her poetic aims. It uses *Versed* as an example of what Armantrout's poetry, and by extension poetry which engages with other discourses more generally, might gain from cognitive interpretations, particularly in light of Gilles Fauconnier and Mark Turner's account of conceptual integration networks. It

[169] Armantrout and Press, p. 55.

questions whether finding new cognitive ways to interpret poetry offers readers the possibility of gaining a deeper understanding of foreign visions and philosophical concepts.

Chapter Four focuses on *Money Shot* and *Just Saying.* Considering how Armantrout's concerns around self, language, and scientific vision have been revised in light of cultural changes and lived experience, it asks what effect Armantrout's anxiety of selves that are being 'increasingly eroded by our online presence'[170] has on her poetry, and whether this shapes the evolution of her metaphors. The chapter considers the ways in which the work of Mary Hesse and Max Black might help inform interpretation of metaphor in poetry. The chapter uses principles of conceptual integration and interaction theories from the work of Gilles Fauconnier, Mark Turner, Max Black, and Mary Hesse in order to propose new ways of considering metaphor in Armantrout's poetry. It suggests that metaphor has become hyper-extended and asks how much of this is due to the incorporation of language from myriad discourses. It asks what difficulties arise from this linguistic amalgamation and how such problems can be addressed.

Chapter Five recognises the cyclical return to the beginning of Armantrout's poetry and asks what has changed about the questions she is asking and the form of the poetry they are asked in. It asks whether the differences between scientific and poetic language have modified the poetry and in what ways. The chapter takes up the difficulty of Armantrout's hyper-extended metaphor, which forces readers to create connections between two different languages; one of which is largely foreign in the absence of native ability in historical, cultural, and individual usage patterns. In light of these difficulties, it questions how Larry Selinker's account of second language acquisition might be helpful in the interpretation of Armantrout's poetry, which uses foreign language in its creation of a poetic interlanguage. This structure is used in the interpretation of poetry in *Itself* as a way of observing and questioning what happens to language and meaning when the visions of science and poetry are manipulated and juxtaposed.

The conclusion focuses on Armantrout's continual cycles of creation, destruction and revision and how she frequently revisits the same questions and problems while examining the language she finds them in. It will ask how far Armantrout's method goes in finding ways to navigate the gap between language and the reality it describes, or what she calls '*thing* and

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[170] William Montgomery, 'Each Passing Thought', *Boston Review,* (2011), <http://bostonreview.net/poetry/william-montgomery-rae-armantrout-money-shot> [accessed 12 March 2017]

idea'. This gap, however, is the place where Armantrout's poetry resides and is not one that readers should try to close; the unknowns that remain in the application and processing of metaphor and scientific visions are important for pushing conceptual boundaries. It will ask whether a poetic method of constant revision, which engages with myriad discourses, offers poetry closer to the true nature of our lived experience and in this way poetry that can help deepen our understanding of difficult and foreign concepts. It asks whether this type of poetic inquiry can move towards John Holmes' 'accurate mystery'.[171] It argues that Armantrout's poetry attempts to create a space in which different truth claims exist concurrently, without the need to dissolve difference or assign hierarchy.

[171] Holmes, p. 194.

Chapter Two:

'Ventriloquy is the Mother Tongue': Unravelling Explanation

Going to the Desert
is the old term

"landscape of zeros"

the glitter of edges
again catches the eye

to approach these swords!

lines across which
beings vanish / flare

the charmed verges of presence

'Extremities'[172]

The desert is where Armantrout starts deliberately isolating herself so that she can 'begin again'.[173] Like early Christian desert fathers, Armantrout goes 'to the desert' to take a 'radical break [from the] social restrictions and discriminatory constraints of [her] day,'[174] or rather to break from the traditions and models of the poetry that came before her to trigger, what Williams called, 'an ethereal reversal'.[175] Stephanie Burt argues that the origins of Armantrout's early poetry were an attempt to 'get out from under the assumptions, conventions, and restrictions of capitalism, patriarchy, romantic lyric, transparent exposition, and prose sense'.[176] According to Burt, the mirage of narrative or 'prose sense' that vanishes and flares throughout Armantrout's early work is an 'expression of temperament', rather than

[172] Armantrout Rae, 'Extremeties', in *Extremities*, p. 1.
[173] Andrews and Bernstein, p. 209.
[174] John Chryssavgis, *In the Heart of the Desert: The Spirituality of the Desert Fathers and Mothers*, (Indiana: World Wisdom, Incorporated, 2008), p. 90.
[175] William Carlos Williams and John C. Thirlwall, *The Selected Letters of William Carlos Williams*, (New York: New Directions Publishing Corporation, 1957), p. 24.
[176] Stephanie Burt, 'Where Things Get Fuzzy', *London Review of Books*, 39. No.7 (2017), 36-37 <https://www.lrb.co.uk/v39/n07/stephanie-burt/where-things-get-fuzzy> [accessed 7 April 2017].

an 'impulse to revolutionary chaos',[177] yet Burt's argument does not wholly account for Armantrout's constant interrogation of self and subject. Many of the frequent 'sparks [that] fly'[178] in Armantrout's poetry can be attributed to her subscription to William Carlos Williams's opinion that, in order to be alive, verse must retain some 'tincture of disestablishment',[179] as well as what she calls the 'Silliman school of poetics. By this I mean a notational observation of an "outer" world combined with a keen attunement to the possibilities of form'.[180] Her poetic interrogation is also a reaction to a childhood experience of religion and her mother's evangelism, which 'provoked an interest in philosophy and cosmology'[181]—an interest that frequents her poetry in the form of a search for narratives relating to origins. Armantrout considers these narratives as mythic and cosmogenic discourses which she makes representative for the origins of explanation itself, before she subsequently dismantles explanation with subversion and metaphor. Armantrout's early poetry explores the evolution of personal origins in relation to their symbiotic relationship with specific moments in culture, space, place, and familial relations. She questions narratives that offer single origin explanations by using metaphors to identify and widen gaps between experience. Armantrout's poetry follows a cyclical structure, which includes the repeated destruction of her own metaphors in order to make way for new meanings, allowing her to return repeatedly to an empty space or 'desert' where the origins of her ideas begin. This method is consolidated towards the end of her earlier works and will be discussed in more detail in the poem 'Back' from *Up to Speed.*[182]

This chapter will examine Armantrout's changing attitudes to science, language and experience, up until *Versed,* to assess what impact these discourses have on the form and content of her poetry and to suggest that the origins of Armantrout's poetics of inquiry began here. Armantrout uses the different types of explanation offered by science and religion to continue her interrogation of the 'ultimate questions'[183] or, more appropriately, the ultimate answers that were given to her in childhood. Alongside a 'struggle with theology' her

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[177] Burt.
[178] Gilbert Adair, 'Like a Metaphor: Ongoing Relations between 'Poetry' and 'Science'', *Jacket2,* (2012), <http://jacket2.org/interviews/metaphor-or-more> [accessed January 2017].
[179] Williams and Thirlwall, p. 24.
[180] Beckett, West, and Drake, p. 25.
[181] Katy Lederer, 'An Interview with Rae Armantrout', *Bennington Review,* (2015), <http://www.benningtonreview.org/armantrout-interview/> [accessed June 2017].
[182] Armantrout, 'Back', in *Up to Speed,* (Connecticut: Wesleyan University Press, 2004), p. .
[183] Armantrout and Press, p. 76.

'visceral sense of consciousness as a problem'[184] is immediately apparent; a problem which continues without interruption in her poetry to date, and one which shapes the form of her poetry because of the unique conflict it creates between her Language origins and their resistance to typical constructions of the lyric "I". Armantrout's early volumes offer an opportunity to track the origins and development of her particular use of scientific and religious metaphor and language, which begins with her interest in cosmogonic myth and lead to her use of extended metaphor and questioning. These concerns are indicative of a poet whose work questions the whole notion of origins, leaving critics questioning the origins of *her* search. This chapter will examine such questions and assess what impact this has on her poetry. Critics, such as Burt and Robert Stanton, look to her early work for the origins of her repeated devices, which later develop into features 'characteristic of her work in general'[185]—characteristics which they then use to create their own myth of Armantrout. For example, Stanton finds evidence in her third volume, *Precedence,*[186] to suggest that her 'temperament [may] have been shaped by a set of social and cultural assumptions and ideals linked implicitly to a specific time and place'.[187] It is unlikely that Armantrout herself would agree with such assessments being tied to her temperament, noting in an interview about her autobiography that it 'is as much about the fallibility of stories and memories as it is about their recovery'[188]—her awareness of time and place does shape her method, if not her personality. Armantrout's recognition of fallibility demonstrates her mistrust and suspicion of narratives and memory even when they relate to her own writing and origins. Prior to *Versed,* Armantrout used science and metaphor as a Straussian mythological language to be 'built up [and] shattered again' so that 'new worlds [can be] built from the fragments'.[189] In light of these arguments, Burt's earlier statement seems to be a reductive evaluation of Armantrout's poetry as her poetic interrogation moves beyond 'disestablishment' and towards destruction where 'trails' of meaning are 'devoured'[190] by lived experience. Examining Armantrout's early poetry is essential in attempting to locate the origins of a cycle

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[184] Beckett, West, and Drake, p. 24.
[185] Robert Stanton, "Hard to Say Where/This Occurs': Domestic and Social Space and the Space of Writing in Rae Armantrout's Work', Arizona State University, (2005) <https://www.asu.edu/pipercwcenter/how2journal/archive/online_archive/v2_3_2005/current/in_conference/stanton.htm> [accessed 20 June 2017; Stanton].
[186] Rae Armantrout, *Precedence*, (California: Burning Deck, 1985).
[187] Stanton.
[188] Beckett, West, and Drake, p. 21.
[189] Claude Lévi-Strauss, 'The Structural Study of Myth
', *The Journal of American Folklore,* Vol. 68. No.270 (1955), 428–44. (p. 428).
[190] Armantrout, 'Generation', in *Extremities,* p. 10.

of destruction, revision and creation that she refines over the course of her writing. In this chapter I argue that destruction is an internal or 'inward' event, as Burt implies, and an external one that shapes the form and structure of Armantrout's poetry— explanations are pulled apart until there is nothing left so that readers are left in the 'desert'.

Armantrout's early poetry is driven by the pressing need to question the answers presented by religion and later by science. The stories and claims of these different discourses enter the poems frequently via allusion and direct reference and they are then subjected to manipulation and revision as 'their explanations […] require imagination and effort to believe'.[191] Armantrout's view and presentation of science and religion as mythologies is due, in large part, to her experience of the structures and explanations of origin stories in the childhood theology she was exposed to. Northrop Frye argues that mythical structures of explanation are frequently displaced into literature, which employs the archetypes and symbols of myth, in the creation of a 'precise scheme of literal, allegorical, moral, and anagogic meanings'.[192] His focus on the authenticity of literary statements, which are derived by borrowing from 'systems outside literature',[193] and his idea of literature as 'displaced myth',[194] provides a useful lens for interpreting Armantrout's poetry. In her first few volumes, Armantrout views the mythology of explanation which science, religion, and their metaphors provide, as a slippery narrative of dangerously conclusive answers that attempt to explain our history, society and habits. Armantrout notes that her first interest is in the 'slither' and 'doubleness',[195] which arises when we use 's*words*' [emphasis mine] to legislate our reality, whether they belong to the language of science or poetry. The equal status of both science and poetry as mythology in Armantrout's work is an important step towards the more objective interrogation of answers and language evident in later volumes.

Armantrout is clearly interested in the different narrative systems proposed by science and religion in their explanations of the origins of our reality and universe, explanations which are used as 'mechanism[s] for generating, constraining, and evaluating hypotheses'.[196] Armantrout's poetry recognises, though rejects, the premises of Frye's convincing argument

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[191] Beckett, West, and Drake, p. 18.
[192] Ford Russell, *Northrop Frye on Myth*, (London: Routledge, 2000), p. x.
[193] Diane. Dubois, *Northrop Frye in Context*, (Newcastle upon Tyne: Cambridge Scholars Publishing, 2011), p. 2.
[194] Russell, p. 91.
[195] Armantrout and Press, p. 55.
[196] Cristine H Legare, 'The Contributions of Explanation and Exploration to Children's Scientific Reasoning', *Child Development Perspectives*, 8. 2 (2014), 101–06, (p. 8).

that mythologies create 'recurrent images and symbols', or 'archetypes', [197] which connect across large areas of knowledge. Instead, Armantrout refuses to resolve these interconnected symbols and hypotheses to form singular meanings by choosing to cut off the path of connection and reroute them. For Armantrout, resemblance is a negation to meaning rather than an aid to it; she writes: 'resemblance/is the passage/down which meaning flees/, branching/now and now'.[198] Armantrout's treatment of science as mythology makes it a more useful tool in poetic inquiry as she attempts to relocate the gaps science addresses. Science, like mythology, is concerned with the 'gaps, chinks, hinges [and] holes …of life',[199] and she says it is in these gaps that she finds 'so much poignancy'.[200] Armantrout takes hold of both stories and gaps in her poetry, which she uses 'as a mechanism for testing'[201] the explanations given by science and religion. Her poetry enacts a search for explanations which are capable of withstanding rigorous testing; however, it often finds that the gap between experience and knowledge cannot be resolved so the search has to be refined and repeated. The difficulty remains that the 'bible stories, fairy tales, scientific theories and myths' which enter her early poetry, particularly in *Extremities* and *The Invention of Hunger*, are used 'as ways to raise questions'[202] rather than a narrative of answers; the varying ways that Armantrout uses these allusions and languages makes it hard to put forward an encompassing case for the poetic method of inquiry recognisable in her later work. The form and structure of the poetry in her earliest volumes also has a less fixed style, ranging from short riddle-like poems to longer prose poems, and the 'faux collage'[203] she uses is less integrated. For these reasons, this chapter will aim to locate instances of the developing patterns and techniques that arise from her use of the visions and languages of science, religion and their metaphors. Such analysis is further necessary to avoid creating a myth of Armantrout; a difficult poet whose style, Burt notes, is 'difficult to predict but easy to spot',[204] even considering that myth 'deals, by definition, with what is unpredictable'.[205] Burt's dismissal of Armantrout's poetic interrogation as a product of 'temperament' neither explores nor explains the reasons or outcomes of Armantrout's repeated engagement with science, myth and metaphor.

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[197] Dubois, p. 2.
[198] Rae Armantrout, 'Our Daphne', in *Next Life*, (Connecticut: Wesleyan University Press, 2007), p. 37.
[199] Kenneth McLeish, *Myth: Myths and Legends of the World Explored*, (London: Bloomsbury, 1996), p. vi.
[200] Armantrout and Press, p. 55.
[201] Legare, p. 8.
[202] Armantrout and Press, p. 111.
[203] Regan.
[204] Burt.
[205] McLeish, p. vi.

2.1 Exploration not Explanation

Poets and scientists take on the role of exploring reality and both measure through observation and language—the seen by the unseen. Armantrout's poetry states its interest in examining the divide between 'what is seen and what is seeing, what can be known and what it is to know',[206] and highlighting the problems with empiricism that arise from this type of measurement and explanation, namely the problem of perception: the gap between what we perceive and the actual nature of reality—a gap which Armantrout identifies as 'a kind of ventriloquy [in which] *thing* and *idea* don't really merge'.[207] Karl Popper argues that we need to explore the 'relations between perceptual experiences and basic statements'[208] and Armantrout's interest in these relations moves some way to explaining her repeated interrogation as she struggles to correlate 'dogma to experience'.[209] Following dogma relates to translating answers precisely, adhering to instructions, and accepting the explanations given, but Armantrout finds the singular explanations given to her by both religion and science dissatisfactory and she uses poetry to test the dogma they offer. In doing so, she finds, akin to Popper, that scientific knowledge is theory-laden; it is not derived from observation of lived experiences, but tested by them. Poetic observations in Armantrout's poetry scrutinise what she finds in the world in an attempt to align her experience with the explanations for origin she has been given. Her interrogation never ceases, connections are made and purposefully broken so that she can keep on relating them over and over again from different angles. This is because her embodied experiences refuse to resemble explanations for reality so the gap between them remains wide. David Deutsch argues that in order to close this gap empiricists turned to induction to try and make 'predictions about experiences', the idea 'that the distant resembles the near, the unseen resembles the seen'.[210] However, Armantrout finds parallel to Deutsch's argument that this cannot account for how we come to scientific knowledge because most of the reality that scientific theory explains does not contain anyone's experiences. Astrophysics provides one in which frequently the seen does not resemble the unseen, or as Armantrout puts it '*thing* and *idea* do not really merge', because on many occasions 'science predicts… phenomena that is spectacularly different

[206] Armantrout and Press, p. 55.
[207] Armantrout and Press, p. 55.
[208] Karl.R. Popper, *The Logic of Scientific Discovery*, (London: Routledge, 2002), p. 21.
[209] Armantrout and Press, p. 75.
[210] Deutsch.

from anything that has been experienced before'.[211] Armantrout's unfulfilled desire to relate experience to knowledge is the likely reason for her continual questioning, which supersedes suggestions by Burt and even Stanton who think that her poetry is driven by a 'semi-paranoid fear of "tricks", even from those closest to her'.[212] This desire is evident early in her poetic journey and grew, in part, from her childhood experiences.

2.2 Science as Mythology

Armantrout's 'interest in science [began] with religion', impressed upon her by her fundamentalist 'myth-maker'[213] mother. She recognises that at one point 'the Bible was … a kind of universal language in Western culture', and that having been brought up on the Bible she has a 'a deep memory of some of that language',[214] which accounts for its role in her poetry; a poetry in which biblical stories contribute to a poetic language that has 'mythic structure [and] psychological or anthropological value'.[215] Language from Armantrout's 'deep memory' resurfaces amongst the language of mythology and science, and the conflict this produces helps probe the truths and metaphors offered by their discourses; for example, in 'Vice':

> This voice always scolds.
> "Craven!" charged words
> *
> Poison. Electron. Notion.
> (emptied of its contents it.
> takes its course or is the course taken.
> Precision. Clitoris. The searing crystals.
> Wicked. Stylish. True
> stars
> of sensation
> flicker all night between meanings. Superficial?
> Incorporeal constellations.

[211] Deutsch.
[212] Rob Stanton, 'This', *Jacket magazine*, Jacket 39 (2010), <http://jacketmagazine.com/39/r-armantrout-rb-stanton.shtml> [accessed 10 June 2017].
[213] Armantrout, *True*.
[214] Lynn Keller, 'An Interview with Rae Armantrout', *Contemporary Literature*, 50. 2 (2009), 219–39 p. 224–25).
[215] Keller, p. 225.

> Correct / Incorrect one.
> Correct. Detailed. Poised.

In this poem Armantrout explores the science of electrical charge using it to play with the repulsion and attraction of a couple, replacing proton with 'poison' and 'neutron' with 'notion', weaving scientific explanations for the configuration of atoms together with the story of a complex relationship. Armantrout borrows the scientific explanation in short 'precise' sentences by mixing scientific language with other language that is rich in non-scientific associations—anatomical, poetic, and biblical—importing systems from other academic disciplines to create a new myth instead of, as was Frye's concern, as a new literary statement. This new myth, one in which science takes the responsibility for the proverb 'opposites attract', helps create a metaphor for romantic attraction that is displaced via Armantrout's manipulation from the languages of science and theology. As Frye notes, displacing myth into literature includes: 'adjusting formulaic structures to a roughly credible structure';[216] Armantrout's poetic manipulation achieves this by making the stories of science relevant to the contemporary poetry that she offers through a Brechtian style, v*erfremdungseffek*,[217] which when utilised 'twists events', or in this case metaphor, 'so that they confront the audience'.[218]

The poem is full of double meanings that we 'flicker between', but it is hard to avoid the draw of biblical language and references in the earlier section due to a 'child-self', the scolding voice, possibly her mother's, and the intimation that sex is somehow shameful and wicked; an idea frequently repeated in the Bible, notably in Colossians:

> Put to death the sinful, earthly things lurking within you. Have nothing to do with sexual sin, impurity, lust, and shameful desires…but now is the time to get rid of anger, rage, malicious behaviour, slander, and dirty language. Don't lie to each other, for you have stripped off your old evil nature and all its wicked deeds.[219]

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[216] Northrop. Frye, *The Secular Scripture: A Study of the Structure of Romance*, (Massachusetts: Harvard University Press, 1976), p. 36.
[217] The concept of v*erfremdungseffek* has been subject to some controversy due to its difficult translation into English but is generally regarded as a tool developed by Modernist playwright Bertolt Brecht to detach the audience. Brecht used a number of techniques to break down conventions and realism in his political theatre. Brecht's work was heavily influenced by the same socialist politics, which Ann Vickery notes, helped shape the ideals of Language writing. See Ann Vickery's *Finding Grace* in Beckett, West, and Drake, pp. 55–56.
[218] Northrop Frye and Robert. D Denham, *Myth and Metaphor: Selected Essays, 1974-1988*, (Charlottesville, Virginia: University Press of Virginia, 1990), p. 117.
[219] Colossians, 3:5–10.

These references are framed by ‘stars’ and combine to create ghostly echoes and ‘incorporeal constellations’, reiterating that Armantrout’s interest in cosmology is tied to her questioning of religious explanations.

Science and religion are afforded the same suspicion as any other layer of Armantrout’s poetic inquiry and this is largely due to their tendency to try and ‘trace everything back to one point’.[220] She writes that she is ‘fascinated with questions of origin’ and finds it ‘mysterious’[221] that science and religion both point to singular origins. Her desire to unravel the origins and explanations offered by science and religion is evident in much of her poetry. This continual unravelling eventually develops into a recognisable and repeated technique, giving grounds for the argument that a poem can represent a more objective site of inquiry. The poem ‘Pairs’[222] demonstrates Armantrout’s initial labelling and identification of singular narratives as examples of ‘the one true path’,[223] echoing the ‘one true god’[224] of evangelical theology; the poem continues:

> Any deviation
> may play havoc with the unborn.
>
> From this we may learn there is one true path?
>
> A string of favours, one per bead, to be asked in sequence.
>
> This hasn't worked for us, but we know
>
> this is how things work.

Armantrout’s repeated movement of rosary beads suggests quiet revolution, asking the reader if this has ever really worked; authority expects instructions to be followed, but these are mindless repetitive instructions indicating a scepticism of authority that again casts doubt on Burt’s claim that her ‘resistance to conventions’ is not related to an ‘impulse to revolutionary

[220] Armantrout and Press, p. 111.
[221] Armantrout and Press, pp. 110–111.
[222] Rae Armantrout, 'Pairs', in *Necromance*, (Los Angeles: Sun & Moon Press, 1991), p. .
[223] See Introduction, p. 1.
[224] Robert Paul Lightner, *Handbook of Evangelical Theology: A Historical, Biblical, and Contemporary Survey and Review*, (Michigan: Kregel Academic, 1995), p. 56.

chaos'.[225] The suggestion, given by the question and the negation, is one of change and revolution in the face of controlling social conventions.

Armantrout's interrogation of the metaphors used by scientific and religious explanation relating to the Garden of Eden, the cosmos, dark matter and the soul, begins in her first volume *Extremities* and peaks in *Next Life*. One of the motivations for this scrutiny appears to be a reaction against her mother's dislike of metaphor and her preference for 'the solid, separate reality of things'—metaphor, Armantrout says, made her mother 'uncomfortable'.[226] For Armantrout, bible stories, particularly origin stories like the Garden of Eden, were metaphorical to her; the Garden of Eden represented the complicated nature of consciousness. She says she viewed the 'Tree of Knowledge of Good and Evil as not only conscience but consciousness'[227] and this led to an awareness of mortality and continual fear. For Armantrout's mother, however, the story of the Garden of Eden was to be taken quite literally, and she communicated these 'truths' to Armantrout in a nominalist fashion, that is, in 'words that refer[ed] to discrete non-transferable essences',[228] but these assertions gave Armantrout considerable discomfort. Deutsch argues, considering the role of mythology in society, that 'the human mind seeks explanations', but this type of explanation was too easy for Armantrout having been raised in a home where questions such as '"Why?" and "What do you mean?" didn't seem to be allowable'.[229] This repression of curiosity seems to have led to a greater interest in questioning to deepen her understanding and offers a reason for why she now 'can't stop asking them'.[230] Armantrout seems to share Deutsch's opinion that the metaphor of the Garden of Eden as an 'unproblematic' state is equal to a 'state without creative thought' or, at the very least, creative 'death'.[231] She writes that the poetry she values is capable of reproducing 'conflicts and fractures'.[232]

In Armantrout's poetry, religious explanation is more myth than reality and in a 2006 interview with Charles Bernstein she said she found 'her mother's myth-making repulsive', and that the scepticism that this triggered may be 'what lies behind'[233] her propensity to write

[225] Burt.
[226] Armantrout and Press, p. 75.
[227] Keller, p. 225.
[228] Ibid, p. 75.
[229]Armantrout and Press, p. 141.
[230] Armantrout and Press, p. 141.
[231] Deutsch.
[232] Armantrout and Press, p. 62.
[233] Sound.

poetry over fiction; a suggestion that indicates her opinion of poetry is an appropriate tool for the critical examination of the 'ultimate questions' she is interested in. The idea of using poetry for inquiry solidifies in later volumes and is one that has been taken up by many of Armantrout's contemporaries, notably Lyn Hejinian. Many myths can be said to be 'functional', that is preserving knowledge about 'certain observed characteristics',[234]but Armantrout seems to take a more anthropological view of religious and scientific accounts, perhaps not surprising considering Anthropology was her first major course of study, viewing their metaphors and stories as 'confused attempts at causal explanation'.[235] This stance can be observed in one of her earliest poems 'Universe'[236] from *Extremities:*

> Ultimately .... fabricates.
>
> Rotate a little, big baby.
>
> "matter, left alone." Of course!
>
> This way, it is thought,
> a little faster and so on.
>
> Tending to tend. Indeed
>
> appear
> O main sequence

This poem demonstrates the start of Armantrout's long-standing interest in cosmology, particularly in those theories which relate to origin and creation. This poem is likely to be in response to the work of scientists like Vera Rubin and Kent Ford, whose work on galaxy rotation curves suggested that the outer regions of galaxies 'rotate more rapidly than expected, suggesting the presence of dark matter'.[237] At first, such discoveries proved highly controversial and caused 'virulent arguments',[238] but they were becoming increasingly influential at the time Armantrout was writing. Despite Armantrout's clear interest in the subject matter there is another tone at work in Armantrout's poem in the lines: 'rotate a little,

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[234] David Abram, *The Spell of the Sensuous : Perception and Language in a More-Than-Human World,* (New York: Pantheon Books, 1996), p. 119.
[235] Abram, p. 119.
[236] Armantrout, 'Universe', in *Extremities,* p. 7.
[237] Peter Coles, *The Routledge Critical Dictionary of the New Cosmology*, (New York: Routledge, 1999), p. 315.
[238] Richard Panek, *The 4-Percent Universe,* (Oxford: Oneworld Publications, 2012), p. 51.

big baby. / "matter, left alone." Of course!'. Armantrout takes key scientific ideas of dark matter and galaxy rotation and gives them double meanings: the universe is a 'big baby', young and unknowledgeable, at once needing our attention and yet represents the basis of our creation. We manipulate the universe: 'rotate a little' in our search for explanation, and there 'Of course' hidden behind the visible universe is the unidentifiable matter, 'left alone'.

What happens when 'matter [is] left alone', whether in scientific terms or as experiential *subject* matter, proves an interesting idea for Armantrout. When used alongside metaphors for the cosmos these ideas parallel the paradox of the Copenhagen interpretation of quantum theory, highlighted most famously by Erwin Schrödinger. At the same time, mind was being re-injected to all matter by discoveries in physics particularly those of Werner Heisenberg, who pioneered the idea that 'the common division of the world into subject and object, inner world and outer world, body and soul [was] no longer adequate'.[239] Armantrout recognises, like the physicists working at the time of her writing, that 'indeterminacy comes first' and that it is only with observation that 'precision comes';[240] analogous to the emerging argument her poetry makes for continual and objective interrogation and observation.

Armantrout's recognition of the need for interrogation gives justification for the derisive tone she creates with her use of sardonic, alliterative language, such as 'big baby', and the questioning in the line 'Ultimately…fabricates', creating duality for the universe as either a construction or a fabrication of scientists who are using unidentifiable matter to create an explanation for the origins of our universe. As shown, Armantrout is uncomfortable with explanations that offer final answers, particularly in relation to origins, yet her unease helps account for the poem's tone in responding to the 'ultimate' answers and the scientist's attempts to create definitive stories—stories which Armantrout finds both questionable and in need of questioning. Armantrout recognises questioning as a universal human need for explanations 'appear O main sequence', but it is the parent-child relationship between scientists and the cosmos that causes conflict between personal origins and universal ones. This relationship emphasises the imbalance of power between personal relations and different types of knowledge in her poetry. It is not the science itself that causes friction, but the

[239] Kapila Vatsyayan and Indira Gandhi National Centre for the Arts, *Concepts of Space, Ancient and Modern*, (New Delhi: Indira Gandhi National Centre for the Arts, 1991), p. 48.
[240] David A. Grandy, *The Speed of Light: Constancy and Cosmos*, (Indiana: Indiana University Press, 2009), p. 46.

confidence that science has in its ability to uncover definitive answers and present them as universal truths, just as the explanations given to her by her mother's religious beliefs.

2.3 The Illusion of Certainty

Armantrout's poetry is not a Blakean rejection of science's 'dismal steel'[241] but a recommendation to 'stand inside uncertainty', which 'underwrite[s] metaphor'[242] and metaphor's ability to suggest more than one path parallels the duality in the developing physics of her time. Stanton identifies Armantrout's need for a multifaceted explanation in reference to her later poetry, and this desire is closer to Popper's idea of a 'conjecture'—the idea that scientific theory is 'always open to the possibility of refutation'.[243] Stanton continues by arguing that Armantrout's interrogation is scientific in spirit rather than 'philosophical, sociological or even personal',[244] and this lean toward objectivity is evident in her earlier work, though her method is still unsettled and prioritises the stimulation of creativity by allowing the serpent from the Garden of Eden to lift the veil on illusion.

Armantrout's exploration of the intrusion of culture and capitalism on consciousness acts as a deconstruction of personal origins; frequently these explorations are, as Stanton has noted, connected to a precise moment in time and place, and he argues that this enables her to 'recor[d] a certain forensic distance from her own experience'.[245] This distance is essential for Armantrout as she tries to put space between her poems and the 'degraded linguistic environment'[246] of Contemporary American culture. Prior to *Versed,* these intrusions are used to lift the illusion of certainty in explanations of origin. In Armantrout's early poetry the offer of absolute answers by science and religion cause her the most anxiety. Exposing misplaced certainty is a persistent desire in at least the first decade of her published works, and her subversion of language and narrative to expose illusion is apparent in the repetition of the metaphor of the Garden of Eden. Brenda Hillman notes 'each of her books has references to the home garden as the original garden, to the afterlife, and makes reference to the Christian meta-story'.[247] 'The Garden', from *Necromance*,[248] appears a decade after its first inclusion

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[241] Blake and Ostriker.
[242] Armantrout and Press, pp. 76–77.
[243] Robert Stanton, '"How Many Constants Should There Be?": Rae Armantrout's Quasi-Scientific Methodology', *The Poetic Front,* 3 (2010).
[244] Stanton, p. 3.
[245] Stanton, *'Hard to Say Where/This Occurs': Domestic and Social Space and the Space of Writing in Rae Armantrout's Work*
[246] Armantrout and Press, p. 128.
[247] Beckett, West, and Drake, p. 48.

and the poisonous 'Oleander' 'lipstick' helps Armantrout demonstrate other types of illusion, such as the illusion of progress in gender equality. As Hillman argues, this demonstrates that 'her concern is with the manipulation of perception by culture',[249] a concern which increases in significance as her poetry progresses. Armantrout deals with these concerns by overlapping key scientific and religious ideas to create double meanings and to distort the information they offer; these 'subversions of narrative',[250] as Michael Leddy calls them, demonstrate Armantrout's scepticism of the confidence with which explanations are given and presents readers with a concrete example of her developing poetic method. Armantrout's subversions are a continual feature of what Stanton notes is her use of the 'voice of scientific discourse'.[251]

This subversive, Derridean tactic is used repeatedly in Armantrout's poetry whether myth, religion or science are being scrutinised; for example, in the poem 'Generation' from the same volume:

> We know the story.
>
> She turns
> back to find her trail devoured by birds.
>
> The years; the undergrowth

The subversion of the fairy tale of Hansel and Gretel tells us not only that following or leaving a linear thread is futile, but that the stories passed along generations cannot be followed home. This is because 'years' or time, along with the 'undergrowth' or gathered experience and associations, have obstructed and 'devoured' any hope of following such a simple path or origin. The poem lacks final punctuation indicating a lack of closure, which Armantrout feels should be the position for most narratives. The poem should be noted for its position is a key moment in Armantrout's exploration of consciousness, which, as will be discussed later, is often positioned amongst bird symbols. For Armantrout, science and religion's reckless exploitation of language and metaphor creates myth and supports Jacques Derrida's argument that 'truths are illusions of which one has forgotten that they are illusions;

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[248] Armantrout, *Necromance*.
[249] Beckett, West, and Drake, p. 48.
[250] Leddy and Armantrout, p. 742.
[251] Stanton.

worn-out metaphors which have become powerless to affect the senses'.[252] Daniel Sarewitz notes that 'the truth claims of science are powerful sources of legitimacy in cultures committed to the intellectual traditions of the Enlightenment',[253] and these claims are exactly what Armantrout wants to question, particularly in light of cultural influence; she says 'we know the story', but in order to discover new 'trails' and stories we must now be free from the illusion of it. Sarewitz has drawn attention to how the 'cultural context in which [scientific] experiments are carried out'[254] can distort our perception of scientific results. He does not dispute the validity of scientific methods but argues the necessity of remaining cognisant to the influence of culture, recognising that the pressure of culture on scientific research leads science to create myths based on that pressure, rather than acting via a self-motivated framework of accountability. Frye also argues that literature is 'historically conditioned'[255] and therefore it is essential for it to adapt to the cultural requirements of its context. Likewise, Armantrout's poetry recognises the role cultural and societal influences play to mythologise language and metaphor, as in 'View'[256] from *Extremities:*

> Not the city lights. We want the
>
> -the moon-
>
> The Moon
>
> none of our own doing

In 'View', the observation of the moon as 'none of our own doing' is one of the first indications of Armantrout's interest in the origins of the relationship between nature, culture, and society; a relationship she continues to investigate but is presented here, as Ron Silliman notes, as the 'all-but-invisible-film of culture'[257] over nature. The punctuation in 'View' jars with the repetition and forced emphasis on the moon, or as Armantrout writes: 'Our thrust towards the non-human moon can't escape the gravity of received language'.[258] The graphological deviation in 'View' marks an important development in Armantrout's

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[252] Jacques and Moore F.C.T Derrida, 'White Mythology: Metaphor in the Text of Philosophy', *New Literary History*, Vol. 6 No.1 (1974), 5–74 (p. 15).
[253] Sarewitz Daniel, 'Normal Science and Limits on Knowledge: What We Seek to Know, What We Choose Not to Know, What We Don't Bother Knowing', *Social Research,* Vol. 77. No.3 (2010), pp. 997-1010 (p. 997).
[254] Daniel Sarewitz, *Frontiers of Illusion,* (Philadelphia: Temple University Press, 1996), p. xi.
[255] Dubois, p. 2.
[256] Armantrout, 'View', in *Extremities,* p. 16.
[257] Armantrout, *Veil: New and Selected Poems,* p. xiv.
[258] R. Armantrout and Singing Horse Press, *Collected Prose,* (Singing Horse Press, 2007), p. 57.

distinctive style where the images created by the words on the page, along with the line breaks and punctuation, expose the illusion created by her poetic technique—a technique that becomes more consistent in later poetry. This exposition of technique means that readers are prevented from relaxing into familiar explorations of poetic subjects, such as the relationship between society and nature, and are forced towards a more considered interpretation as the reading takes place from a more detached position. In 'View', Armantrout's manipulation of metaphor and rhetorical device allows readers to observe the misleading qualities of language, that she refers to as 'slither', by juxtaposing single and multiple voices with the impossible task of having the moon; 'the single voice of the nature lover and the words of a somewhat cynical crowd seem to collide'.[259] This poem adds another layer to Armantrout's developing interrogation of consciousness, with the irony of the poem's different voices that create a 'consciousness of dissonance' in which 'the savant and the ignorant crowd may well be one person'.[260]

The psychological impact of the moon in culture, myth, science and religion is one that helps us to link their different languages. As Dianne Sadoff writes, 'most moon legends also reflect the culturally dualistic portrayal of women: the virgin and the whore, the source of inspiration and madness, the life-giver and destroyer', continuing that 'when a women writer encounters these mythologies she must reinvent, revise, and transform them'.[261] The 'divided psyche',[262] represented by the symbol of the moon, points Armantrout and her readers towards the necessity of reinvention and her mistrust not only of language and poetic devices, but of knowledge more generally; as Dennett notes 'most poststructuralist/ postmodernist theorists hold that all knowledge, including science, is provisional because culturally constructed'.[263] The poem's desire for the moon is paradoxical, and despite being a symbol of light it also represents a longing to shift backwards into the metaphorical darkness or 'desert' of pre-scientific and pre-cultural knowledge and awareness, a location where explanations could be variable and dualistic. Armantrout is aware that her mistrust of knowledge has been acquired via a culturally influenced language, or 'degraded linguistic environment',[264] and provides a motivation for her move towards more dialectically driven poetics. As her writing develops

[259] Armantrout and Press, p. 57.
[260] Armantrout and Press, p. 49.
[261] Dianne F Sadoff, 'Mythopoeia, the Moon, and Contemporary Women's Poetry', *The Massachusetts Review,* 19. 1 (1978), pp. 93-110 (p. 98).
[262] Armantrout and Press, p. 54.
[263] David Lodge, *Consciousness & the Novel: Connected Essays,* (Harvard University Press, 2002), p. 90.
[264] Armantrout and Press, p. 128.

she engages a number of poetic tools, such as hyper-extended metaphor,[265] poetic interlanguage, found speech/language and collage, to achieve her particular type of v*erfremdungseffek,*[266] a distancing tool that offers more opportunities for objective exploration. The distance that Armantrout creates *re*creates the 'active space' with 'borders [that] can end',[267] proposed by scientific discourse, borders that represent ideas of absolute origin that she wants to reject.

2.4 The Origins of Armantrout's Poetics of Inquiry

> Poetry comes to know what things are. But this is not knowledge in the strictest sense; it is, rather, acknowledgement—and that constitutes a sort of unknowing. To know *that* things are is not to know *what* they are, and to know *that* without *what* is to know otherness (i.e. unknown and perhaps unknowable). Poetry undertakes acknowledgement as a preservation of otherness—a notion that can be offered in a political, as well as epistemological, context.[268]

Armantrout's poetry deliberately concerns itself with the 'double-bind',[269] which Hejinian identifies, and affords equal status to 'assertion and doubt';[270] in this way her poetry utilises, rather than overcomes, the conflict caused by the different languages she uses in her poetry. The 'double-bind', or the dichotomy between 'what is seen and what is seeing',[271] can also be considered in terms of the historically established differences between science and poetry. Armantrout notes the position of subjectivity in her poems saying that 'all of [her] poems start with feelings' and that she doesn't believe you can 'separate thinking from feeling'. She also acknowledges that feelings can easily arise from objectively derived knowledge, such as those she reads in 'physics books',[272] and, as she observes in a 2004 interview, this type of

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[265] By this I refer to metaphors that compress associations into different input spaces across several poems, an argument that will be developed in more detail in subsequent chapters.
[266] See Chapter 2, p. 42.
[267] Armantrout and Press, p. 127.
[268] Hejinian, p. 2.
[269] Armantrout and Press, p. 55.
[270] Armantrout and Press, p. 55.
[271] Ibid, p. 55.
[272] Adam Fitzgerald, 'The Poetry Collider: Rae Armantrout on the Intersection of Art, Science and Life', Literary Hub, (2015) <http://lithub.com/the-poetry-collider/> [accessed 22 May 2017].

material has provided her much 'inspiration... over the last fifteen years'.[273] Armantrout's subtle manipulation of scientific material occasionally forces it to ambiguity; frequently her language can be read as 'characteristics objects might have in our experiential world [and] aspects of elementary particles'[274] or scientific theories. Armantrout uses this ambiguity to 'open up possibilities' and 'develop metaphors',[275] yet it is likely that this grew from childhood experiences as she notes she 'longed for alternate ideas [she] could use to escape the literalist noose of fundamentalism'.[276] In Armantrout's poetry, allowing scientific language to occupy a position in which it could make singular assertions of fact or knowledge would be to allow creative death, just as literalist explanations of The Garden of Eden had produced for her. The myth of the Garden takes on a metaphorical role as one of the origins of her interest in the 'problem of consciousness';[277] it allows poetry to concern itself with doubt and Armantrout to release the noose of explanation and leave space for exploration.

Armantrout's recognition of the importance of explorative interpretations does not prevent her from carrying out her own rigorous testing of the knowledge she acquires through lived experiences and her 'reading to the limit of [her] understanding in physics or cognitive science'.[278] Armantrout's first three volumes demonstrate a personal exploration of technique and poetics and, although elements of her future style are evident, they are interspersed with other, at times, failed experiments in form. Often the poetry in these volumes struggles with the anxieties Armantrout's experience in society have given her, which Silliman suggests 'motivates many of [her] poems',[279] along with the problems she encounters with knowledge and consciousness, such as to 'know *that* things are is not to know *what* they are'. One of the techniques originating in earlier volumes is her 'replaying' of ideas. Frequently she takes the same idea and explores it from different viewpoints in each instance, an action which can take place in just one poem or across multiple poems. In later volumes she uses this technique to test, with disciplined scrutiny, what she calls the 'big questions'[280] that concern both science and poetry. In her earlier volumes this technique was a far more personal questioning of her background, and an awakening to the type of poetic statements she wanted to make.

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[273] Stanton.
[274] Bonnie Jean Michalski, 'An Interview with Rae Armantrout', Poetry Center, (2015). <http://poetry.arizona.edu/blog/interview-rae-armantrout> [accessed May 2017].
[275] Michalski.
[276] Lederer.
[277] Armantrout and Press, p.110.
[278] Stanton.
[279] Armantrout, *Veil: New and Selected Poems,* p. x.
[280] Armantrout and Press, p. 110.

Scientific language and visions do appear in earlier volumes but their inclusion in the poetry is far less sophisticated, for example, in 'Natural History', the first poem of her second volume, *The Invention of Hunger:*[281]

> ***3***
> was narrowing their options to one,
> the next development.
>
> Soldiers have elongate heads and massive mandibles.
> Squirtgun heads are found among fiercer species.
> Since soldiers cannot feed themselves, each requires
> a troupe of attendants.
> ***4***
>
> Her demands had become more elaborate.
>
> He must be blindfolded,
> (Must break off his own wings)
> wear this corset laced tight
> (seal up the nuptial cell)
> to attain his heart's desire.
>
> Move only as she permits
> (Mate the bloated queen each season)
> or be hung from the rafters.
> How did he get here?

Science in this poem is an obvious presence in Armantrout's 'faux collage', [282] which she writes is made up of extracts 'taken partly from a *Scientific American* article about termites and partly from some material about S&M bondage';[283] although, without this later interview readers may not have known the reference, as Peter Middleton notes 'there is no internal sign that it alludes to articles in *Scientific American*'.[284] In later poetry, language and allusions are often marked by single inverted commas. The relation between the scientific language and the non-scientific language is made predominantly through Armantrout's editing of material

[281] Rae Armantrout, *The Invention of Hunger*, (California: Tuumba Press, 1979).
[282] Regan.
[283] Robert N. Casper, 'Interview with Rae Armantrout', *Poetry Daily*, Jubilat. 18 (2010), <http://poems.com/special_features/prose/essay_armantrout.php> [accessed 1 April 2017].
[284] Middleton, *Physics Envy: American Poetry and Science in the Cold War and After*, p. 210.

and its positioning on the page. Despite this fairly basic juxtaposition, she is still able to carry out a degree of exploration of two diverse subjects in order to explore her position on status and control—ideas she revisits in the rest of the volume and, as Middleton writes, 'Armantrout respects scientific epistemology […] she brings [its] material in for questioning'.[285] In 'Natural History' readers are not told what to think or what semantic connections to make, but graphological positioning seems to suggest the consideration of certain relations. Armantrout's later positioning allows more neutrality between the concepts, but in all of her poems readers retain some responsibility for meaning creation. Aside from positioning the scientific language she inserts it undergoes very little manipulation, and in later volumes scientific language is included more subtly, for example, in 'Attention' from *Necromance:*[286]

> Ventriloquy
> is the mother tongue.
>
> Can you colonize rejection
> by phrasing your request,
> "Me want?"
>
> Song: "I'm not a baby.
> Wa, Wa, Wa.
>
> I'm not a baby.
> Wa, Wa, Wa.
>
> I'm crazy
> like you."
>
> The "you"
> in the heart of
> molecule and ridicule.
> Marks resembling
> the holes
>
> in dead leaves
> define the thing (moth wing).

[285] Middleton, *Physics Envy: American Poetry and Science in the Cold War and After*, p. 210.
[286] Armantrout, 'Attention', in *Necromance,* p. 39.

That flutter
of indifference,
feigned?

But if lapses
are the dens

strategy aims
to conceal,

then you don't know
what you're asking.

At first glance, 'Attention' can be argued, as has been done by Bob Perelman, to be about the 'power struggle between mother and child',[287] evident with language such as 'mother,' 'baby,' 'molecule' and 'dens'. The poem explores these ideas on a much larger scale, including those which constitute Perelman's 'linguistic subjects'; the idea that the language the individuals use is 'formed through a complex of imitation, control, and rebellion',[288] rather than specifics such as noun phrases. This idea alludes to the Lacanian mirror phase; Jaques Lacan argued that this phase represented the origin of language use in children being an idea that Armantrout revisits throughout her poetry. These underlying issues sit with scientific references in 'Attention' and demonstrate Armantrout's early use of detached 'voices' in her poetry, whether the voice belongs to her or represents the voices of others, as in ventriloquy.

Considering Armantrout's poetry as a type of ventriloquy poses the question of whether Armantrout's voice does emerge from elsewhere, either from the found language that she increasingly uses or as a voice shaped by 'late capitalist deprivations'.[289] But, if Armantrout's early poetic interest in language and self was formed from the political and societal pressures of that time, it does not rest there. She writes that the voices in her poems 'manifest their own social unrest'.[290] 'Attention' starts and ends with simulation and pretence

[287] Bob Perelman, *The Marginalization of Poetry: Language Writing and Literary History*, (Princeton: Princeton University Press, 1996), p. 23.
[288] Perelman, p. 23.
[289] Blake Allmendinger, *A History of California Literature*, (New York: Cambridge University Press, 2015), p. 257.
[290] Armantrout and Press, p. 58.

highlighting the consequences of paying attention and in 'lapses' of it with its Lacanian suggestions. The collage and juxtaposition of science, speech and poetic device is more discreet than in 'Natural History,' and in the case of scientific reference marks a gradual shift towards its role in her poetry as a tool with which to investigate experience. It functions as a provider of explanations whose answers need to be unravelled in line with other poetic assertions. In this poem scientific language is given a similar role to other language as a constitutive element in the origin of our selves. A 'molecule', in literal terms, describes a group of bonded atoms, which in 'Attention' represents the microcosm of our physical matter. The positioning of the word subsidiary to "you" and next to 'ridicule' helps Armantrout open up the meaning of the three lines within which it's placed and makes it able to function as a metaphor for a family unit, as well as a feature of the power imbalance in mother-child relationships. The deliberate juxtaposition and rhyme of 'molecule' and 'ridicule' suggests that both literal and abstract understandings of identity are valid; the "you" present in both gives the words equal footing—"you" is at the centre underneath physical matter, and human behaviour is represented by 'molecule and ridicule'.

'Attention' demonstrates one of the strongest instances in Armantrout's early work of her interest in how language and metaphor play a role in creating the gap between 'what is seen and what is seeing, what can be known and what it is to know', a gap caused in part by language that Armantrout later describes as 'ventriloquy'.[291] Often the gap is brought into sharper focus by structural divisions on the page. In 'Attention', 'Ventriloquy/ *is* the mother tongue' [emphasis mine] both on a personal level and a universal one; the mother's voice appears to come as a ventriloquist's voice, from another location, because on a universal level all language comes from a location external to our real selves, or according to Lacan: 'language exists completely independently of us'.[292] The idea of language as a detached entity is supported by Armantrout's question of whether it can be 'colonized' by taking ownership of it, manipulating it with "Me want?". Underlying this exploration of language is the conflict of self, which is both bound to others as atoms and familial similarity "like you" and hidden with the mimicry and crypsis in Armantrout's image of moth wings and dead leaves. The observation of 'the thing' as either 'dead leaves' or 'moth wing[s]' is crucial to the dilemma uncovered by Armantrout in this poem and relates to our perception of reality,

[291] Armantrout and Press, p. 55.
[292] Jacques-Alain Miller Jacques Lacan, *The Seminar of Jacques Lacan: Book 2: The Ego in Freud's Theory and in the Technique of Psychoanalysis 19541955*, (Cambridge: Cambridge University Press, 1988), p. 284.

constructed albeit deceptively in 'Attention' by language. It is only in 'lapses' of attention, by somehow stepping outside experience, 'colonize[d]' by 'language [which is] burdened with our history',[293] that we can get close to the 'dens' or hiding places of our true self. The paradox at the end of 'Attention' returns us to the start—language is 'ventriloquy' so as soon as you have it: "me want?" your real self is already lost and 'you don't know/what you're asking'.

Armantrout's fascination with origins and mistrust of 'truth' statements continue in her poem 'The Creation' from *Made to Seem.*[294] In this poem, biblical and scientific voices collide in a rewriting of the creation story:

> Impressions
> bribe or threaten
> in order to live
>
> Retreating palisades
> offer
> a lasting previousness.
>
> .
>
> In the beginning
> there was measurement.
>
> How much
> does self-scrutiny
> resemble mother-touch?
> .
>
> *Die Mommy scum!*
>
> To come true,
> a thing must come second.

'The Creation' manipulates the different narratives given by science and religion for the origins of the universe. Armantrout makes comment on religious accounts of origin with the

[293] Jacques Lacan, p. 285.
[294] Rae Armantrout, 'The Creation', in *Made to Seem*, (Los Angeles: Sun & Moon Press, 1995), p. 13.

word ‘impressions’ which, as well as standing for the literal marks of words on paper contained in the Bible, underlines the lack of evidence given for the creation story; a lack of evidence which accounts for its need to use aggressive persuasion: ‘bribe or threaten/ in order to live’. This line indicates the social control attempted by overly authoritative religious language and alludes to the ‘orderly process of development’[295] in *Genesis.* In order to enjoy the deceptive, but ‘lasting’, comfort offered by these stories, defences must be conceded with ‘retreating palisades’. Armantrout’s defences are created through inquiry and uncertainty, which remain throughout the poem.

The second section overlaps the language of science in relation to movement, energy, and religious explanations for the origin of life to propose an uncertain creation story of its own. Armantrout develops this overlapping further by taking exact language from both scientific sources and the Bible to give these voices a ‘farcical’[296] tone. Although Armantrout does not identify the scientific sources, she acknowledges their presence: ‘certainly the mysterious role of measurement in quantum physics enters in as does the equation of energy (movement) with matter (substance)’.[297] In light of the creation story this section uses scientific motion to depict life inside the body, both as breath and life inside the womb, to show that ‘both possible paths’[298] can be taken. The problem that uncovering these two opposing paths presents moves the poem forward towards the consideration of consciousness—life ‘take[s] first/ shape, then substance’.

Armantrout removes the reader’s confidence in scientific and religious explanations by presenting consciousness and self awareness as a dilemma for science, religion, and readers, by subverting language: ‘In the beginning/there was measurement’. The role of description and language in *Genesis* is to ‘confirm the dependence of everything on God’s unique determination’.[299] Armantrout removes God’s role as the shaper of things ‘utterly without form’[300] by removing the words ‘God created the Heaven and the Earth’,[301] and replacing it with ‘measurement’—a specific and objective determination of quantities, yet this does not represent ‘the beginning’ according to scientific explanation either. The positioning and

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[295] G. Every, *Christian Mythology*, (Hamlyn, 1970), p. 24.
[296] Armantrout and Press, p. 59.
[297] Armantrout and Press, p. 76.
[298] Ibid, p. 77.
[299] Every, p. 24.
[300] Every, p. 24.
[301] John.R. Rice, *"In the Beginning ...": A Verse-by-Verse Commentary on the Book of Genesis, with Detailed Studies on Creation Vs. Evolution, the Flood, Etc,* (Tennessee: Sword of the Lord Publishers, 2000), p. 34.

overlapping of languages continues from Armantrout's previous volume, as seen with 'molecule and ridicule' earlier in 'Attention', by opening and balancing these two supposedly opposing languages meaning that the two explanations, or as Armantrout would see them problems, effectively cancels each other out. Armantrout develops this technique to cause uncertainty, a position she borrows from the quantum mechanics uncertainty principle and which, she writes, she takes 'perverse pleasure in' because she believes that its 'fuzziness underwrites metaphor'.[302]

Armantrout frequently uses this cancelling technique as an opportunity to present or *re-p*resent abstract problems, which in 'The Creation' relates to problems of consciousness and origin. The third section asks: 'How much/ does self-scrutiny/resemble mother touch?' This question points to the origin, the 'mother-touch' of consciousness or the moment we become aware of self 'self-scrutiny.' An idea is reinforced by the entrance of a third voice in the final section, 'apparently that of a child'.[303] The child's voice is one of defiance and, considering the problems Armantrout has opened with this defiance, it is likely to be directed at religion, science and even the idea of consciousness itself leaving us with 'no voice that can be trusted'.[304] This position is confirmed by removing the status of 'truth' with the line 'To come true,/ a thing must come second', questioning the validity of creation stories further— by definition creation stories are concerned with what comes first so according to this assertion they cannot come 'true'. Armantrout's concerns with origin and explanation undergo continual development and remain closely tied to her fascination with consciousness, as seen above in 'Attention' from *Necromance,* a volume published four years prior to *Made to Seem.* The final section in 'The Creation' seems to pose the same dilemma as the final lines in 'Attention', in that it is not possible to 'know/ what you're asking'; this seems to cultivate the ideas present in 'Attention' relating to how language creates our selves as well as our consciousness of them, but, as language is arbitrary, it persists as 'the discourse of the other'[305]— we continually remain detached from our 'true' selves.

Repetition persists as a key feature in Armantrout's poetry assuming a variety of different forms, and her repetition of technique and subject matter creates a personal, but accessible,

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[302] Armantrout and Press, p. 77.
[303] Armantrout and Press, p. 59.
[304] Armantrout and Press, p. 59.
[305] Joel. Dor, *Introduction to the Reading of Lacan: The Unconscious Structured Like a Language*, (New York: Other Press, 2013), p. 132.

mythical structure of explanation, earlier described by Frye as a 'precise scheme of literal, allegorical, moral, and anagogic meanings'.[306] Analysing Armantrout's early poetry helps realise the origins of her poetic 'scheme', which becomes more precise as it evolves, borrowing from external systems in the exposition of her complex relationship with science and metaphor. One of the most significant forms of repetition in Armantrout's technique is her application of near-rhyme. Near-rhyme continues meticulously throughout Armantrout's poetry, but the reason for its use is more obvious in earlier volumes and earlier instances tend to share greater proximity.

As in 'Attention's' 'molecule and ridicule', Armantrout frequently positions near-rhymes associated with opposing languages together so as to distance and equalise them for readers; the poem 'Near Rhyme' from *The Pretext* is unsurprisingly littered with instances of near rhyme and provides an example of her self-aware use of this technique, as well as an indication of the origins for the poetic myths she repeatedly creates:

> Do I regret *each* thing
> I recall?
> Or regret remembering
> anything uncalled for?
>
> and wrapping it up
> as if as
> a gift?
> I resent believing
> there is someone else present
> while I think there isn't.
>
> *
>
> That young girl listening
> to "Angel Baby"
>
> on a pink plastic radio
> while staring out her window
> at the planet Venus
>
> was conscious

[306] Russell, p. x.

of doing what girls do—

thrilled to correspond.

That is what it means
to be young.

I could make you want it:
The protein carousel,
pronouns.

So what if self is
else played backwards?

He rhymes
the disparate

nuclei, each one
bow-tie on

"nothing really"

Armantrout notes later in an interview with Joshua Marie Wilkinson that she is a 'sucker for half-rhymes and resonances', continuing that she wants to 'somehow extend one concept into, and through, several really different scenarios or types of "discourse"'.[307] Armantrout notes that she uses this technique to contribute to conceptual extension and that the resonances this creates corresponds sympathetically to her poetic method, a method which draws from the deceptive memories and language that repeatedly comes 'uncalled for' to mind. Both at the start and the end of the first section, Armantrout teases readers with a contradictory 'I' and forces them to consider who is speaking; what is "I" and also the voices that have contributed to her self. Some voices, it appears, she would rather *forget* considering the near rhyme for regret and its repetition next to 'remembering'. Arguments for the presence of Armantrout's conflicted self in the poem seem to be confirmed at the end of the first section with the repetition of 'I', 'resent', and 'present', the near rhyme being, 'I'm present'. This end section also appears to make a dual comment on rationality—'think', and faith—'believing', while simultaneously presenting the academic tendency at the time of her

[307] Christina Mengert and Joshua Marie Wilkinson, *12 X 12: Conversations in 21st-Century Poetry and Poetics*, (Iowa: University of Iowa Press, 2009), p. 22.

writing, to 'question who speaks in literary works, who speaks and for whom'.[308] If we conclude that Armantrout is present in the poem, the second section sees her 'recalling' her origins as a 'young girl' listening to a song, 'Angel Baby'; a version of this song was written by 'The Originals' when Armantrout would have been a teenager. This suggestion is not concrete, but it can be taken with more certainty considering the clichéd depiction of adolescent love, 'pink plastic radio', 'Venus', and the sardonic 'doing what girls do'; that the girl's desire to 'correspond' represents, at least in Armantrout's opinion, an inferior or at least immature approach to lived experience.

The final section unfolds metaphysical considerations of self and, as in 'Attention' and 'The Creation', the close proximity of near-rhyme functions to equalise the 'different types of discourse' that Armantrout wants to 'extend'. This works particularly well for 'protein carousel and pronouns', which Armantrout uses as a metaphor for ever-evolving self. Protein, in scientific terms, is an essential element of every living thing and, as well as 'being distinct'[309] from one another, they only exist for a certain amount of time before being reused and 'degraded by proteolysis'[310]—the breakdown of protein at the cellular level into smaller units. This provides a useful metaphor for self while concurrently offering an insight into Armantrout's poetic method, which frequently breaks ideas down into smaller components in a type of wordplay. In 'Near Rhyme', rhymes and words are fragmented, repeated and rearranged and this helps to progress the idea that the younger self, or 'young girl', is an essential aspect of a later, more mature self, even if the sentiment of it is 'resented' and time has degraded its validity. 'Pronouns' draw attention to Armantrout's comment 'on who speaks and for whom',[311] particularly if pronominal representations are considered in the context of the next three lines, where the 'self', or 'a person's essential being that distinguishes them from others',[312] 'is else played backwards'. In other words, self is structured not only by our previous selves, but by the other people: 'pronouns', 'else' that are 'present'. As Armantrout comments on a different poem in the same volume, our selves are both 'constructed systems' and also 'constructors of these systems' and that identity may fall within this 'blind-spot'.[313] Armantrout ends by calling into question everything she has

[308] Armantrout and Press, p. 58.
[309] B. Alberts and others, *Molecular Biology of the Cell, Sixth Edition*, (Taylor & Francis Group, 2014), p. 110.
[310] Alberts and others, p. 396.
[311] Armantrout and Press, p. 58.
[312] Angus Stevenson, *Oxford Dictionary of English*, (Oxford: OUP Oxford, 2010), p. 1613.
[313] Armantrout and Press, p. 100.

explored in the poem with the near-rhymes 'nuclei' and 'bow-tie', which opens a scientifically driven metaphor for self; a reasonable interpretation considering her previous reference to molecular biology, whose understanding of a nucleus parallels the unique aspects of self, which carries 'hereditary information on threadlike structures'.[314] These 'nuclei' as either individuals or, as is likely in this poem, aspects of individuals, are only held together—'bow-tie'—by "nothing really", since Armantrout's exploration up to this point has demonstrated that problems of consciousness, self and language are paradoxical and circular like the loop of a 'carousel'; their existence can only be approximated in a near rhyme that searches for origins.

The concept of origin as multifaceted and circular continues in her volume *Veil,*[315] and, while echoes of religious language remain a feature in her poetry, from this point on scientific language takes the more dominant role, particularly when questions of origin are being questioned. The final poem of *Veil,* published the same year as *The Pretext,* signals this shift as molecular biology is overlapped with considerations of poetic and personal origin. 'Purpose' presents readers with a developed manifesto for Armantrout's poetics marking the point at which her style and form become more fixed in contrast to her poetic subject matter, which, now safeguarded by a more rigorous method, explores and manipulates 'different discourses' with more freedom. 'Purpose' contains ideas that are revisited by Armantrout through to *Versed* and beyond, such as the embodiment and chemical absorption of experience, which later becomes the transformation of 'oxidation/ into digestion'[316] and the idea of passing through zero, or 'one grasp',[317] of something whole. 'Purpose' reiterates the main purposes of Armantrout's writing, which by her own assessment is 'to keep herself awake and alive', but most importantly Armantrout wishes to remain awake to the 'interventions of capitalism into consciousness'. [318]

> From the first
> abstraction,

[314] Alberts and others, p. 173.
[315] Armantrout, *Veil: New and Selected Poems*.
[316] Armantrout, 'Results', in *Versed*, p. 3.
[317] Armantrout, 'Integer', in *Versed*, p. 93.
[318] Armantrout and Press, p. 120.

loss
is edible.

To think
is to filter

passers-by through your
semi-permeable membrane;

keep yourself
in circulation.

what if appetite
is a by-product?

If you pass through
zero,

you may see someone
you love.

Here's your mother
with her anxious grasp,

her clock watching.

'Purpose' points toward the origins of Armantrout's poetic 'purpose', which again signals the reaction to the absolute truths her mother raised her on. 'Purpose' takes an embodied approach to the exploration of self and consciousness, despite the beginning inference to abstractions rather than concrete realities, and further analysis reveals a more physical or 'edible' digestion of experience. According to Antonin Artaud, 'the body is the first abstraction'[319] and it represented an unpredictable physical representation of self that was tied and influenced by internal and external forces: 'The active mind, through images, sounds, and gestures sends out and expands itself and the body into this external world. Since the process moves first from the abstract out of the "void", a "concrete" language becomes necessary to

[319] Sally Banes and Andre Lepecki, *The Senses in Performance*, (New York: Taylor & Francis, 2012), p. 205.

hold the form'.[320] Artaud was influential in the avant-garde movement and his influence on Armantrout's predecessors, including Williams who admired and 'salut[ed]' his work, is clear. Williams felt he was instrumental in the 'breaking down of ... metrical traditions',[321] and this contributes to the 'disestablishment' that Armantrout progresses. Armantrout's 'purpose' to stay 'awake and alive' works parallel to Artaud's 'active mind', and the thinking mind as a 'filter' becomes a metaphor for the life of a cell with a 'permeable membrane'. This membrane allows only certain elements in or out and, by Armantrout's metaphor, contributes to the larger 'circulation' of society by moving ideas and language around, as well as helping to keep a person 'alive and awake'.

In the centre of the poem, Armantrout questions whether thinking and digesting the world are mutually dependant—the more you think about your experience the more you yearn to understand it—and this longing produces the drive to 'decide what is significant, salient'.[322] The final section demonstrates most clearly the origins of Armantrout's 'purpose', which points to a rejection of absolute truths, which is introduced with 'pass[ing] through zero', an integer or whole number without a fractional component. In science and mathematics, it is also defined as the 'point from which all measurements are made';[323] sometimes called 'origin', it marks the intersection of axes in a coordinate system—the point at which all coordinates are zero. It is at this point that Armantrout introduces the 'mother', another symbol of origin. The mother in this poem is fearfully 'grasp[ing]' on to the unalterable and absolute concept of time. The mother's 'clock-watching' displays not only a lack of interest in questioning her surroundings, but an anxiety for anything that moves outside of this absolute system.

Armantrout's poetic creation follows Frye's description of mythic structure, but rather than mimicking the existing system of explanation, Armantrout creates one of continual exploration. The continuity of this method depends on constant destabilisation, through repetition and metaphor, which is used to cancel out apparently opposing visions from science and religion. Armantrout's exploration never results in concrete discovery or ultimate

[320] Robert Balas, *The Poetic Vision of Antonin Artaud*, (Madison: University of Wisconsin--Madison, 1971), v. 1, p. 116.
[321] Banes and Lepecki, p. 152.
[322] Armantrout and Press, p. 124.
[323] Eddie .C.K. Mullan, *Maths in Action*, (Cheltenham: Nelson Thornes, 2004), p. 30.

explanation, which means it moves from 'disestablishment'[324] to a constant cycle of destruction and renewal. This enables a continual return to the 'desert' where Armantrout can rebuild 'from the fragments'.[325] This cycle of renewal and destruction means that in her next book *Up to Speed*[326] she is able to ventriloquise the authoritative voice of science in her own explorations. However, it does not follow that in using the language and visions of science that she accepts their authority; at times her poetry questions them, but it is precisely this method of questioning that reflects the continuous process of the scientific method, a method that begins with ideas and questions around why things are the way they seem to be.

'Back' in *Up to Speed* draws attention to the emerging difficulties that arise from Armantrout's more developed method of inquiry, one which speaks in more than one language. Armantrout's method moves closer to Louis Zukosfsky's earlier 'scientific definition of poetry',[327] but remains a poetry that questions the scientific-ness of science. The final poem of the volume 'Back' offers a paradoxical, yet fitting end:

> The teacher said
> two mirror images
>
> Could come into being
> by borrowing
>
> from zero—but only
> if they agreed
>
> to cancel one another out.
>
> We followed
> from inert matter
> by offering
> to eat each other up.
>
> *
>
> What sort of place is
> existence

[324] Williams and Thirlwall, p. 24.
[325] Lévi-Strauss, p. 428.
[326] Armantrout, 'Back', in *Up to Speed*, p. 69.
[327] See Introduction, p. 8.

since we can “come into” it?
A point coincides;
it has no dimension.
Some say
matter’s really energy

and energy is force
of law

and law is just
tautology.

*

We were taught

to have faces
by a face

looking “back”

In ‘Back’, mathematics, quantum theory and philosophy overlap in an exploration of existence and consciousness as perceived via an embodied experience; the result is a restless and uneasy sequence that only poses more dilemmas. The voice of the teacher ‘looks back’ to the ‘landscape of zeroes’, the first poem of Armantrout’s first volume, and echoes the constant state of destruction and renewal given by ‘passing through zero’ in ‘Purpose’. The ‘two mirror images’ represent identical forces acting in opposing directions that although at first appear to provide balance, also ‘cancel one another out’. The idea of cancelling provides important links to Armantrout’s method of metaphor and conceptual extension. Armantrout offers readers a concept or metaphor, only to return to it and cast doubt on its validity, often by repeating it with slight variance in tone and language. In ‘Back’ this developing technique can be identified with the Hegelian allusion ‘law is just tautology’ and refers both to repetition and language.

The first section of the poem considers matter in light of quantum fluctuation: 'the ground-state mechanical energy associated with oscillations retained in a matter'.[328] Armantrout acknowledges her fascination with this theory and its 'virtual particles and their mirror-image anti-particles [that] constantly pop into existence and then annihilate each other', continuing that 'formulas seem to express physical laws by putting an equals sign between things'.[329] Armantrout finds in 'Back' that formulas offer her no resolution because, as shown, her experiences do not match the explanations given to her by science. The second section explores scientific explanation further, again exploring and rejecting ideas of singular origin which 'trace everything back to one point'.[330] 'A point coincides;/ it has no dimension'—the poem then turns towards more metaphysical explanations; the 'point' for Armantrout is that these continual processes, existences, and annihilations happen all at once, and because they happen in an impossible dimension it is not measurable.

In this section, Armantrout plays with repetition by looking at the same problem from a different perspective and, as in earlier volumes, this repetition helps her build upon her own 'scheme' of meanings. In 'Back' it also facilitates poetic exploration in parallel to the investigations of particle physics. 'Back' considers how matter might interact with language: 'come into', 'energy', 'matter', 'law', and the Hegelian echo of law as tautology. In addition to the idea of what is, at times, empty repetition, this reference combined with the poem's title brings readers to more of Hegel's ideas, which argued that looking 'back' was essential as the past contains history, which is 'always ready to be re-actualised',[331] and is capable of imparting wisdom that is worthy of re-examination and reuse. Armantrout mines previous myths and explanations for knowledge and meaning. This method points to the Hegelian paradox, being the impossibility of finding an ultimate answer which is able to correlate knowledge with experience or 'spirit': 'like the reason of observation that was laid over the top of phenomena, this law-giving reason likewise ends by producing empty concepts whose only claim to rationality is their conceptual self-identity, that is, the law is just tautology'.[332] In other words, we cannot experience a static whole as nothing is lost or destroyed; as Armantrout says 'matter's really energy/ and energy is force /of law'. Armantrout's poetry

[328] J.X. Zheng-Johansson and P.I. Johansson, *Unification of Classical, Quantum, and Relativistic Mechanics and of the Four Forces,* (Nova Science Publishers, 2006), p. 38.
[329] Armantrout and Press, p. 79.
[330] Armantrout and Press, p. 111.
[331] Catherine Malabou, *The Future of Hegel: Plasticity, Temporality, and Dialectic,* (Abingdon: Routledge, 2005), p. 147.
[332] John Edward. Russon, *Reading Hegel's Phenomenology,* (Indiana: Indiana University Press, 2004), p. 130.

appears to advocate and observe unavoidable processes of redistribution and renewal both in language and the natural sciences, which provides one argument for Armantrout's deliberate manipulation of language and metaphor.

In the final section Armantrout turns to the Lacanian mirror stage: 'a face looking back' or 'the moment the baby acknowledges the division between himself and that image of himself'.[333] Armantrout wonders 'if we exist only as paired, entangled, tautological images, do we exist at all?'[334] A thought which calls on a darker 'agonistic aspect of the mirror stage ... derive[d] from a Hegelian-Kojevian encounter between subject and the other as a ... struggle for recognition on which independent self-consciousness is predicated'.[335] This mirror stage, according to Lacan, is also the 'moment in which a child first acquires the language necessary to function in the social world'[336]—for Lacan and Armantrout 'language is consciousness'.[337] 'Back' represents the moment in which Armantrout's desert finds, like particle physics, that 'empty space is anything but'; it is a space in which 'beings vanish / flare'[338] with 'quantum particles flitting in and out of existence'.[339] 'Back' offers a subtle poetic assertion that only by 'looking "back"' and questioning our consciousness, our existence and our explanations, can we move forward.

Examining Armantrout's early poetry uncovers her concerns with what she calls 'the problem of knowledge' and her resistance to 'linear narratives'.[340] Her poetry questions not only origins, but also development and growth; the 'struggle for recognition' becomes a struggle, as Burt notes, to see more than that which 'our lives and our societies will let us see'.[341] As her poetry develops it subjects the narrative systems proposed by science and religion to rigorous interrogation as she attempts to undermine their desire to 'trace everything back to one point'.[342] In her early poetry, the different narratives offered by science and religion are

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[333] Jodi R. Cohen, *Communication Criticism: Developing Your Critical Powers,* (London: SAGE Publications, 1998), p. 183.
[334] Armantrout and Press, p. 79.
[335] Shuli Barzilai, *Lacan and the Matter of Origins,* (Stanford, California: Stanford University Press, 1999), p. 81.
[336] Cohen, p. 183.
[337] Cohen, p. 201.
[338]Armantrout, 'Extremities', in *Extremities,* p. 1.
[339] Adrian Cho, 'Physicists Observe Weird Quantum Fluctuations of Empty Space—Maybe', *Science,* (2015), <http://www.sciencemag.org/news/2015/10/physicists-observe-weird-quantum-fluctuations-empty-space-maybe> [accessed May 2017].
[340] Beckett, West, and Drake, p. 16.
[341] Burt.
[342] Armantrout and Press, p. 111.

afforded almost equal status because of Armantrout's overarching distrust in the 'slither' and 'doubleness'[343] of the words they are given in. Towards the end of this period, Armantrout recognises 'Biblical truth as a form of manipulation both in and out of itself'[344] and she remains acutely aware of its influence. However, the visions of science become increasingly important as Armantrout borrows from the language and visions it offers and employs these as additional tools in deconstructing explanation, particularly those relating to origin. Scientific language and vision becomes a way to create distance in language and concepts, while at the same time suggesting that different truth claims should be considered concurrently. The role of metaphor in creating illusion is recognised in Armantrout's early poetry through the metaphors employed by science and poetry. These visions are overlapped as Armantrout attempts to lift the illusion created when metaphor is used to close the gap between perception and reality. In order to move beyond this illusion, Armantrout repeats and stretches metaphor, a technique clear in references to the Garden of Eden, which as repeated is 'change[d], teas[ed] and [expand[ed].'[345] In Armantrout's early poetry readers witness the creation of a new shifting mythology, which cancels out its 'contradictory messages' by 'annihilati[ng] the space separating'[346] them and 'passing them through zero'. Armantrout breaks down ideas and messages using repetition, wordplay, highlighting illusion and creating conceptual conflict. The selected poems from Armantrout's earlier work have attempted to demonstrate these methods, for example in 'Extremities' and 'Near Rhyme', in which wordplay and repetition prevent readers from settling on a secure meaning. In 'Vice', 'Pairs' and 'Universe', the juxtaposition of science and religion creates a mythology of explanation, calling their validity into question. The poet's own self and language is equally unstable, which can be observed in 'Generation', 'View' and 'Attention'; these poems reject linear meaning and observe the deceptive nature of a self constructed through language. Finally, poems like 'Purpose' and 'Back' make language and meaning 'edible', 'to think / is to filter' words, and thoughts 'cancel one another out' or 'each eat other up'. In this way, readers are returned to the 'desert' though this time the destruction of language leaves us with nothing for different reasons.

[343] Armantrout and Press, p. 55.
[344] Beckett, West, and Drake, p. 48.
[345] Beckett, West, and Drake, p. 48.
[346] Frye and Denham, p. 7.

As this chapter has shown, Armantrout attempts to move past words as 'determinate coding[s] passed down to us'[347] by fracturing metaphors and the words that create them. The problem that this raises for Armantrout and her readers is one which Vidyan Ravinthiran highlights in his recent essay on Armantrout—the idea that 'language (within a poem, or outside of it) may approach vacuity but never truly get there, for words are constantly effusing significance, however uncorralled'.[348] Armantrout terms this problem 'ventriloquy', and her poetry continually tries to move beyond the 'constant suffusion of significance' given to us by words with which we only ventriloquise. Despite the fact that Armantrout's early work helps develop an approach that helps us be aware of the 'endlessly renewing loop'[349] of language and meaning as a kind of ventriloquy, it does not manage to step outside of it. This failure distances Armantrout's poetry from some of the Language writing tenets that contributed to its development, leading it towards a poetry that, according to Ann Vickery, 'realis[es] that the search for the invisible must be focused on the visible world. Writing becomes meditation, the lyric a site of reflexivity'.[350] As well as increased conflict between language and lyric, Armantrout's circular method removes the space between scientific and poetic vision, which creates a conflict that readers must navigate in order to interpret the poetry.

[347] Andrews and Bernstein, p. 167.
[348] Vidyan Ravinthiran, ' The Lonely Dream: On Rae Armantrout's Partly: New and Selected Poems, 2001–2015 ', *Poetry* (2017), <https://www.poetryfoundation.org/poetrymagazine/articles/92024/the-lonely-dream> [accessed September 2017].
[349] See Chapter 2, p. 63.
[350] Beckett, West, and Drake, p. 56.

Chapter Three:

'How [do you] distinguish one / light from the next?'

Language and the Individual in *Versed*

'When something I hear or read or see leaves me with an unresolved feeling or leaves me puzzled, I've learned that I can follow that feeling or that puzzlement into what turns out to be a poem.'[351]

Until *Versed,* Armantrout's focus had been heavily trained upon the different truth claims offered by science and religion and the language and metaphors they are given in. She finds that the language and metaphor they use are motivated by a desire to offer conclusions, answers, and certain explanations. Armantrout rejects these narratives and, having failed to step apart from what she sees as a type of ventriloquy, moves to open the void that their language and metaphors have attempted to heal. The violence created in unpicking metaphor bridges leaves a void between self and collective. This chapter asks what happens to meaning when shared unifying metaphors are broken apart and reformed through the concurrent use of scientific and poetic vision. It questions whether the increasing conflict between Language and lyric in Armantrout's poetry reflects a similar struggle between understandings of self in relation to a collective, and applies cognitive principles of interpreting metaphor to Armantrout's *Versed,* which allows poetic interpretation to follow Armantrout's process of breaking and remaking connections via extended metaphors.

Armantrout's early poetic development results in a unique construction of the lyric 'I'; her childhood experiences complicate the lyric subject in her poetry, so that they question their own existence as they move through non-linear narratives of experience. The combination of scientific and poetic vision expands metaphor requiring readers to create associations and to take ownership of Armantrout's words, which become like the lyric 'utterances for us to utter

[351] Melissa Bull, 'The Poet Thinks with Her Poem: An Interview with Rae Armantrout', *LemonHound3.0,* (2012), <https://lemonhound.com/2012/09/21/the-poet-thinks-with-her-poem-an-interview-with-rae-armantrout/> [accessed 12 June 2018].

as our'[352] own. Cognitive theories of metaphor prove the most useful for interpreting Armantrout's poetry, because they move language beyond the individual and towards more universal embodied understandings, paralleling one of the overarching goals of lyric poetry and Armantrout's own move towards understanding the self as formed through a collection of narratives, rather than an individual one. This chapter will employ key aspects of cognitive poetics and cognitive metaphor theories—particularly those formulated by Reuven Tsur, the first to use the term cognitive poetics, and Gilles Fauconnier and Mark Turner's conceptual integration networks, in the analysis of poetry from *Versed.* Margaret H Freeman's application of conceptual metaphor to poetic interpretations provides a useful example of how cognitive interpretations of poetry can be structured and will be referred to closely.

3.1 Versed

From the ambiguous one-word title Armantrout starts as she means to continue with elusive and playful 'verse'. At first glance, the poetry appears simple with an invitational tone, direct speech, and words that remain largely unadorned with rhetorical flourish, but, as Lee Bollinger notes, this can be deceptive; the poems in *Versed* act as 'little thought-bombs detonating in the mind long after the first reading'.[353] *Versed* marks a peak in Armantrout's interest in scientific visions; as Rob Stanton notes it contains 'deliberately scientific poetry, which explores definitions of lyric poetry without being wholly contained by them, and demonstrates fragility in form and context'.[354] Reviewer Jeremy Noel-Tod similarly remarks on certain vulnerabilities in the poetry, which he argues are traceable to roots in lyricism and its 'deliberate isolation from narratives of experience'.[355] Todd Pederson observes that the poetry is interspersed with found expressions and language from media, science, and pop culture whose 'conflicting messages … land like rain'.[356] These intrusions contribute to a now recognisable and deliberate disconnect between form and meaning, leaving readers grappling with what appears to be a number of loose ends and critical assessments of the

[352] Virgina Jackson and Yopie Prins, *The Lyric Theory Reader: A Critical Anthology*, (Baltimore: Johns Hopkins University Press, 2014), p. 133.
[353] The Pulitzer Prizes, 'The 2010 Pulitzer Prize Winners', (2010) <http://www.pulitzer.org/citation/2010-Poetry> [accessed 12 May 2013].
[354] Robert Stanton, Book Review Rae Armantrout's 'Versed' in <http://jacketmagazine.com/39/r-armantrout-rb-stanton.shtml> [accessed 5 May 2015].
[355] Jeremy Noel-Tod, Times Literary Supplement, in <http://www.upne.com/0819568793.html> [accessed 2 May 2015].
[356] Pederson.

collection shift between images of violence— 'little thought-bombs'—and frailty— 'fragility in form and context'. This chapter suggests that these different assessments are developmental markers as Armantrout refines her method of poetic inquiry.

The poems in *Versed* follow a free verse construction consisting largely of two and three-line stanzas. These stanzas often function as self-contained units which, though internally cohesive, create uncertainty in their connection to the other stanzas in the poem. This leaves readers uncertain of how to piece together poetic meaning and reflects Armantrout's desire to create poetry with 'an equal counterweight of assertion and doubt'.[357] Armantrout often uses extended and hyper-extended metaphors[358] to connect to other locations in the volume, creating a network in which our interpretations become distributed and 'redistributed'[359] as we develop ideas from our experientially based interpretation of her poetry and our unique understanding of language. This is a recognisable feature of the conceptual integration network theory to be discussed alongside poetic interpretation. Armantrout's use of metaphor, which becomes stretched and fragmented, creates parallel structures with what Fauconnier and Turner define as 'conceptual blending' in their conceptual integration network theory. Conceptual blending is when 'structure from input mental spaces is projected to a separate, "blended" mental space' […], and during blending, vital conceptual relations between mental spaces often undergo compression to create effective and powerful structures in the blend'.[360] Armantrout's method means that readers share responsibility for structuring repeated images and metaphor which modify our understandings of the original concept as they develop through the poetry.

Armantrout's use of metaphor and the conflict between Language and lyric create instability in the reader's cognitive interpretations of her poetry. Although Noel-Tod and Stanton view this as a type of 'vulnerability', her awareness and critique of her metaphors suggest she is in control of her method, if not the outcome. Armantrout says that she tends to 'pick at metaphor as one might pick at a scab'[361] and throughout *Versed* she remains openly suspicious of it as in the title poem*:* 'Metaphor forms/ a crust/ beneath which/ the crevasse of

[357] Armantrout and Press, p. 55.
[358] By Hyper-extended metaphor, I refer to associations, which have been compressed into different conceptual spaces across several poems, an argument that will be developed in more detail in Chapter Four.
[359] Armantrout, 'Results', in *Versed*, p. 4.
[360] Fauconnier and Turner, p. 1.
[361] Adair.

each experience'.[362] For Armantrout the 'scab', a metaphor for metaphor, is a way of closing the gap between experience and language, and in closing this gap the complexities of embodied experience and language that we use to construct our reality are hidden. To reach this hidden information we must unpick the deceptive bridge between language and experience created by metaphor. Armantrout wants readers to participate in, and to be 'aware' of, 'the underlying structures of thought and language'.[363] As she says, 'the poor scab is a mere vehicle';[364] her constant picking creates poetic ruptures which moves us towards Theodor Adorno's ephemeral lyric moments or, as Cleanth Brooks and Robert Penn Warren describe them in their essay on lyric poetry, 'moments of pure realisation'.[365] These moments in the poetry conflict with a Language centred deconstruction and attention to metaphor and the materiality of language itself.

'Pleasure' offers an example of the conflicting moments of Language and lyric in *Versed,* as well as demonstrating the underpinning ideas of self, cells, society, and systems, which are a contributory factor in this increased conflict:

A sleight-of-hand
equilibrium

being produced
as bees

pass one another,

a ticklish rumble
shuttling between blooms.

I'd like to think
I'm one,

no,
all of them.

*

[362] Armantrout, 'Versed', in *Versed*, p. 5.
[363] Leddy and Armantrout, pp. 739–760, (p. 739).
[364] Adair.
[365] Jackson and Prins, p. 186.

This sense of
my senses

being *mine*
is what passes

life to life?

How distinguish one
light from the next?

Only distinctions *can*
matter.

(Canned matter.)

*

Just made up
of

tuning fork ferns,
blackbird pipe-lettes:

Little golden
self-measuring
extents. [366]

The lyrical first section of this poem unfolds the extended metaphor of bees around a flower. The introductory lines: 'Sleight-of-hand / equilibrium'[367] alludes to balance and the manipulation of objects, making it reasonable to suggest that the derivative source for this metaphor is 'Paradiso', the third part of Dante's 'Divine Comedy',[368] in which Canto Dante sees a rose symbolising divine love and eternity; angels fly around the rose like bees delivering love and peace shortly before Dante learns about predestination—an idea that, as

[366] Armantrout, 'Pleasure', in *Versed*, p. 18.
[367] Armantrout, 'Pleasure', in *Versed*, p. 18.
[368] Alighieri, D. (2004). The Divine Comedy, Digireads.com: 'That sacred army, that Christ espoused with his blood, displayed itself in the form of a white rose, but the Angel other, that sees and sings the glory, of him who inspires it with love, as it flies, and sings the excellence that has made it as it is, descended continually into the great flower, lovely with so many petals, and climbed again to where its love lives ever, like a swarm of bees, that now plunges into the flowers, and now returns, to where their labour is turned to sweetness'.

shown, causes Armantrout unease. The discussion of 'matter' in the second section contains a hyper-extended metaphor from an earlier poem, 'A Resemblance'. In the earlier poem 'matter is mostly aura? / Halo'[369] and it is used here as a metaphor for the soul and carries connotations of light or luminosity, hyper-extending the 'aura' from the earlier 'A Resemblance' into the 'light' that distinguishes 'one… from the next' in 'Pleasure'. Along with the developing metaphoric network, the poetry in *Versed* is highly allusive and many sources, including T.S. Eliot's 'Ash Wednesday', contribute to the metaphor of 'matter' as the container and containment for the soul. Armantrout's discussion of matter in 'Pleasure' comes with a hyperlinked set of associations generated by the previous metaphor, which help its evolution to a cell metaphor. Cells in this example are separate to the soul, though the poet wonders if an individual sensual experience passes life to the matter, enabling cells to make distinctions for themselves.

In the final section cells are 'golden/ self-measuring/ extents' borrowing the layer of meaning from the metaphor of 'self-monitoring'—a function of the cell partly via Platonic reference,[370] 'writ large' in the title poem of the volume. These different images replicate with surprising accuracy the dynamic nature of cells provided by scientific vision. Armantrout's poetic representations closely resemble visual metaphors of the cell that were being produced by the medical animator, David Bolinsky, at the time that Armantrout was writing *Versed*. Bolinsky describes cells as 'self-directed, powerful, precise and accurate devices'.[371] In *Versed,* Armantrout's use of scientific vision twists the Platonic reference—rather than looking at the state to understand the individual, we need to look 'beneath' the individual's cells and the metaphors that constitute them to understand the nature of the state. Armantrout's metaphor suggests it is necessary to look at cells to conceptualise the state of the individual. A person using this metaphor is made of 'tuning fork ferns', borrowing the mathematical concept of the golden or divine ratio; ferns use a fractal pattern of growth, each smaller section being a copy of the whole. Nature returns the reader to the first section except now the image is the architecture of the 'bee's cell'[372] (honeycomb), which also uses the golden ratio. The bees provide an example of Armantrout's network of meaning as they

[369] Armantrout, 'A Resemblance', in *Versed*, p. 10.
[370] See: Plato, et al. (1993), *Symposium and Phaedrus*. (New York, Dover Publications; London: Constable), One the central metaphors in *The Republic* is the state as a macrocosm for the individual: 'the state is the individual writ large'.
[371] http://www.xvivo.net/animation.
[372] D.A.W. Thompson and J. T. Bonner, *On Growth and Form*, (Cambridge University Press 1992).

appear again later in the volume in the final section of 'Dark Matter' and she draws readers directly to her previous poem. This time their meaning has been transformed, potentially after Armantrout's experience of cancer, and they communicate an ominous message:

> 'Once we believed the bees,
> moving as attention does,
>
> settling and lifting
> from blue identicals,
>
> were the picture
> of eternity'[373]

At this point the bees no longer represent a balance of peace and time, though they still carry resonance from their first inclusion, but Armantrout casts doubt on Dante's angelic harmony with the word, 'once'. Simultaneously, this calls into question the previous connections made by her own bee metaphor, providing the opportunity to extend its work and create new associations. The subtle repetition and variation of tone provides an example of how Armantrout breaks previous metaphors to develop and extend meaning. The extension of this metaphor requires readers to compress its occurrences, complicating the normal passage of time and disrupting the lyrical elements of these poems. As will be discussed below, conceptual compression, which includes time, is one of the 'vital relations' in the creation of a conceptual integration network as it helps to 'compress [structures] selectively within a blended space'.[374]

3.2 The Swerve[375] of Language and Lyric in *Versed*

> I think that in the moment when a connection is made, when a and b are linked, there can be a paradoxically brief sensation of timelessness. […] And that's the one thing the work of art can do, perhaps especially the 'lyric poem'. […] So, am I a lyric poet?

[373] Armantrout, 'Still', in _____, p, 109.
[374] Gilles Fauconnier and Mark Turner, 'Compression and Global Insight', *Cognitive Linguistics*, 11. 3-4 (2001), p. 10.
[375] After Hank Lazer's essay: 'Lyricism of the Swerve', see Beckett, West, and Drake, pp. 131–161.

> Obviously not if that means someone who writes first person poems about personal feelings—[376]

Armantrout's poetry resists definitions of both lyric and Language poetry yet retains a basis in each. Her poems create violent collisions between experience and language to provide powerful moments of lyrical insight that 'reproduce conflicts and fractures',[377] while other moments 'code shift' and dodge through the 'various voices [which] speak'[378] in her poems. These shifts create persistent conflict in what Ron Silliman calls her 'anti-lyric literature',[379] although, as Hank Lazer notes, Armantrout has also been labelled the 'most lyrical of all the Language poets'.[380] These restless definitions reflect the nature of Armantrout's poetry, which refuses to alight for any length of time on the brief moments of connection it makes. This unique lyrical swerve is partly due to her interest and association with Language poetry and, at the same time, she acknowledges such lyricism, which 'puts her on the outside of the Language poets group'[381]—a group she has been frequently identified with and not without just cause.[382] In spite of this, Silliman, who is highly qualified to speak about her poetics as a friend, colleague, and fellow language poet, remarks in the foreword to her seventh volume of poetry *Veil*[383] that attempts to define Armantrout's poetry as lyric is as futile as an attempt to 'categorise [her] poetry… as an instance of Language writing'.[384] Her method often lies contrary to expected lyric form, particularly in the absence of a subjective first-person narrative; however, amongst moments of intense conflict Armantrout does create moments, not of personal epiphany but moments that disrupt the normal passage of time, which David Baker argues is 'the fundamental subject of the lyric poem',[385] to realise something, such as in the final section of 'Results':[386]

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[376] Beckett, West, and Drake, Lyn Hejinian Interview, p. 19.
[377] Armantrout and Press, 'Cheshire Poetics', p. 55.
[378] Armantrout and Press, 'Cheshire Poetics', p. 55.
[379] Armantrout, *Veil: New and Selected Poems,* p. xi.
[380] Beckett, West, and Drake, p. 132.
[381] Poem Present.
[382] Timothy Yu identifies the role Armantrout deliberately took in shaping the Language poetry project 'in order to fragment and reconstruct a discourse that had become oppressive even to its own subjects,' even if, as Leddy argues later, she rejects the label: 'Armantrout is one of the most artful and inventive poets to be associated with the terms "Language writing" and "Language centred poetry".' See: Leddy and Armantrout; Timothy Yu, 'Form and Identity in Language Poetry and Asian American Poetry', *Contemporary Literature,* 41. 3 (2000), 422-61.
[383] Armantrout, *Veil: New and Selected Poems,* p. xi.
[384] Armantrout, *Veil: New and Selected Poems,* p. xi.
[385] David Baker, 'Lyric Poetry and the Problem of Time', *Literary Imagination,* 9. 1 (2007), 29–36 (p. 32).
[386] Armantrout, 'Results', in *Versed*, p. 5.

while the contrapuntal
nodding
of the Chinese elm leaves

redistributes
ennui

This method moves close to, but not identical with, what Robert Langbaum terms the 'epiphanic mode', which he argues 'begins with the Romantic poets [when] lyric became the dominant genre',[387] and continues to contemporary poetry mode that attempts, and inevitably fails, to 'eliminate time' in order to 'replace chronology with epiphany'.[388] Yet, in other moments, Armantrout's poetry frequently depicts the action of time on objects and individuals; these instances simultaneously manage to 'foreground [the lyric poem's] contradictions and impossibilities—the conjunction of brevity and timelessness'.[389] This is because Armantrout 'won't believe / that what's continual / is automatic'.[390]

When trying to ascertain what the 'notoriously difficult to define'[391] lyric is, Adorno's eloquent essay, 'On Lyric Poetry and Society',[392] remains a major force in understanding 'the terms and the terrain for thinking about the value of poetry in recent history'.[393] Despite limitations, its influence remains evident in the repetition of his ideas, particularly those on the modern construction of lyric, in Jackson and Prins' 2014 collection of critical essays: *The Lyric Theory Reader.* For Adorno, lyric at its best is an ideal that offers an ephemeral moment in which essential elements of universal human truth and beauty can be understood. These transient moments exhibit what David Baker suggests is 'the dream of the lyric poem', a desire to be 'outside time'.[394] Armantrout's bees go about their work, with a 'ticklish rumble … between blooms',[395] unaware and unaffected by the immersed observer 'whose

[387] Robert Langbaum, 'The Epiphanic Mode in Wordsworth and Modern Literature', *New Literary History,* 14. 2 (1983), 335–58, (p. 343).
[388] Baker, p. 31.
[389] Beckett, West, and Drake, p. 19.
[390] Armantrout, 'Running', in *Versed,* p. 54.
[391] Jackson and Prins, p. 1.
[392] Jackson and Prins p. 339.
[393] Erin Wunker Bart Vautour, Travis V. Mason, Christl Verduyn, *Public Poetics: Critical Issues in Canadian Poetry and Poetics,* (Ontario: Wilfrid Laurier University Press, 2015), p. 200.
[394] Baker, p. 29.
[395] Armantrout, *Versed,* p. 18.

ordinary life stand[s] still'[396] as they watch—their perception of time vastly different to the bees.[397] 'Lyric poetry too must 'remain unaffected by bustle and commotion…[its] very essence lies in either not acknowledging the power of socialisation or overcoming it through the pathos of detachment'.[398] As readers, this detachment comes partly through our endeavours to experience time differently, we attempt to enter the garden and watch the movement of the bees which demonstrates 'the paradox at the heart of time and the lyric instant';[399]the moment attempts to be outside time—it is glimpsed and only partially experienced through the poem.

In 'Pleasure', as in the majority of Armantrout's poems, we are offered moments of insight into society, identity, body and soul that seem to contradict 'the Language poet's challenge to the Lyric I'.[400] Yet, Armantrout's poetry rejects other essential lyric features, particularly those that concern its 'self-absorption, its withdrawal into itself [and] its detachment from the social surface, [which] is socially motivated behind the author's back'.[401] In contrast, Armantrout remains engaged and openly investigative of the society and culture in which she writes. The 'I voice', as Adorno puts it, heard in Armantrout's poetry, is 'not immediately at one with the nature to which its expression refers';[402] any detachment felt in Armantrout's poetry comes from the collisions caused by her manipulation of form and the apparently undeveloped inclusions of found language from society and culture, rather than a non-acknowledgement of them. This detachment, instead of alienating readers to produce a kind of aesthetic longing to which Adorno later refers, moves closer to a Brechtian *verfremdungseffek;*[403] Bertolt Brecht wrote: 'only those who have learned to think dialectically will hold it possible that a technique derived from the realm of illusion can be used as a weapon in the struggle against illusion'.[404] Brecht's work was heavily influenced by the same socialist politics which, as Ann Vickery notes, helped shape the ideals of Language

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[396] Mark L. Winston, *Bee Time: Lessons from the Hive*, (Massachusetts: Harvard University Press, 2014), p. 236.
[397]See: Kevin Healy and others, 'Metabolic Rate and Body Size Are Linked with Perception of Temporal Information', *Animal Behaviour*, 86. 4 (2013), 685-96. 'Body size and metabolic rate both fundamentally constrain how species interact with their environment… and their rate of temporal information processing'. Current research suggests that time moves more slowly for smaller insects.
[398] Douglas Kellner, Stephen Eric Bronner, *Critical Theory and Society: A Reader*, (New York: Routledge, 1989); Stephen Eric Bronner, p. 155.
[399] Baker, p. 29.
[400] Yu. p. 423.
[401] Jackson and Prins, p. 343.
[402] Jackson and Prins.
[403] See Chapter 2, p. 42, 51.
[404] John J. White, *Bertolt Brecht's Dramatic Theory*, (New York: Camden House, 2004), p. 94.

writing.[405] In Armantrout's poetry this type of forced detachment moves the reader to a state in which they are less absorbed in order that they may consider the material more objectively and develop the desire seen in her early work to lift illusion. Brecht's aim was to move the audience from being 'one collective individual, a mob [that could] only be reached through its emotions', to 'a collection of individuals, capable of thinking and of reasoning, of making judgments, even in the theatre';[406] an idea that translates persuasively to Armantrout and provides potential motivation for her concerns around the roles played by the individual and the collective, and the resulting conflict between lyric and Language in her work.

The lyric 'I' remains one of the most enduring features of lyric and an accidental definition of it can be found in Armantrout's 'Pleasure': 'This sense of/ my senses/being *mine*',[407] and although Armantrout is almost certainly referring to the soul, these lines uncover the essence of the lyric 'I'. The next few lines call to mind the complexity of the 'I' voice in relation to society: 'How distinguish one/ light from the next?'[408] According to Adorno, although the 'I' feels alienated from the 'collective … it attempts to restore it through animation, through immersion in the 'I' itself'.[409] Armantrout highlights this ideal in her comments on Dickinson as 'fissures in identity and ideology', before noting that her own poems attempt to 'enact such fissures'.[410] According to Adorno neither the 'I' nor the collective can progress without the other. In the lyric, the illusion of alienation from society and a deep absorption into individual expression in respect of the 'collective' or society are fundamental—real division would only stagnate expression. As Armantrout writes in 'Pleasure', such divisions or 'distinctions *can/* matter / (Canned Matter).[411] Lyric, as an act of personal expression, is not so much contested in its existence as is the 'value attributed'[412] to the expression.

Northrop Frye's 1957 essay 'The Theory of Genres' argues that the poet 'turns his back on his listeners' because the lyric is 'pre-eminently utterance overheard—',[413] an aphorism

[405] Ann Vickery notes the influence of post-structuralist theory and socialist politics on Language poetry and writing in her essay on Rae Armantrout and Fanny Howe see: Beckett, West, and Drake. pp. 55–56.
[406] R. Darren Gobert, 'Cognitive Catharsis in the Caucasian Chalk Circle', *Modern Drama*, 49. 1 (2006), 12–40, (p. 14).
[407] Armantrout, 'Pleasure', in *Versed*, p. 18.
[408] Armantrout, 'Pleasure', in *Versed*, p. 18.
[409] Jackson and Prins, p. 341.
[410] Armantrout and Press, p. 56.
[411] Armantrout, 'Pleasure', in *Versed*, p. 18.
[412] Jackson and Prins, p. 2.
[413] Jackson and Prins, p. 30.

borrowed from John Stuart Mill in the nineteenth century.[414] Increasingly, these ideas have been taken up by critics in the twentieth century; Mutlu Blasing, for example, develops the concept of 'utterance overheard' and makes convincing inroads into redefining what it means. She writes: 'the reason that the lyric poet turns her back to the audience is that she *must* be heard and first she must be heard by herself',[415] but Blasing argues the lyric 'I' is not wholly about self-expression; it is a 'socially and historically specific formation'[416] because of the specific linguistic choices that the poet as an individual makes. She continues that the 'experienced effect of an individuated speaker lies in the experience of linguistic material that are in excess of what can be categorically processed', and that 'bodily produced acoustic phenomena and signifying sounds converge [which we] process acoustically and cognitively'.[417] Lyric poetry presents the non-linguistic elements of language to the reader, for the lyric subject language is embodied—a critical argument when applying cognitive theories to lyric poetry. Helen Vendler's views contest lyric's quality of 'utterance overheard' and returns understanding to Adorno; she argues that 'the act of a lyric is to offer its reader a script to say … the words of a poem are not "overheard" … nor is the poet speaking to himself … [they are] utterances for us to utter as ours'.[418] Yet for these utterances to be 'believable', as Vendler says, they must be in order to fit into this definition of lyric; they necessarily have to refer to some universal social truth in order to be spoken as the words of a multitude of different individuals. As Adorno writes: 'the universality of lyric's substance, is social in nature. Only one who hears the voice of humankind in the poem's solitude can understand what the poem is saying'.[419] As Armantrout considers the place of the individual within society: 'I'd like to think/ I'm one, /no, /all of them',[420] so too must the lyric 'I' speak of some essential socialised human quality.

Lyric and language elements in Armantrout's work do find accord with each other on the surface in a recognisable style, even one that swerves to avoid such harmony, but it is not always clear what keeps the 'vertigo effect'[421] of these colliding poetic styles under control. Common ground between Language and lyric can be found in the shared difficulty of

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[414] John Stuart Mill, 'Thoughts on Poetry and Its Varieties', *The Crayon*, 7. 4 (1860), 93–97.
[415] Mutlu Konuk Blasing, *Lyric Poetry: The Pain and the Pleasure of Words*, (Princeton: Princeton University Press, 2009), p. 31.
[416] Blasing, p. 31.
[417] Blasing, pp. 27–28.
[418] Jackson and Prins, p. 133.
[419] Jackson and Prins, pp. 339–340.
[420] Armantrout, 'Pleasure', in *Versed*, p. 18.
[421] Armantrout, *Veil: New and Selected Poems*, p. xi.

understanding the relationship of individual to group; particularly in what constitutes the individual subject or voice. Blasing writes: 'Lyric language is a radically public language, but it will not submit to treatment as a social document … because there is no "individual" in the lyric in any ordinary sense of the term'.[422] By Blasing's assessment, the lyric subject does not stand for one individual 'voice' and concurs with what Majorie Perloff calls the 'dismissal of voice', which she argues is 'perhaps *the* cardinal principle of American Language Poetics',[423] a dismissal that Silliman heralded as a 'new moment in American writing'.[424] This was not a new moment; the lyric 'I' is certainly a complex form, but Language poets who insist that they have dismissed the representation of a person in a poetic text in favour of 'a persona, the human as a unified object'[425] could hardly provide a better definition of the lyric subject by current understandings. Even prior to this, Adorno recognised that, though 'internally contradictory', the lyric subject can manifest 'the entirety of a society'.[426] He went on to state that 'the less the work thematises the relationship of the 'I' and society, the more spontaneously it crystallises of its own accord in the poem'.[427] Over thirty years after Adorno, Silliman argues that Language poetry moves away from lyric because 'the self as the central and final term of creative practice is being challenged and exploded in our writing'.[428] It is fair to note that Silliman's position has softened more recently and whilst he still affirms his 'opposition to the poem as a confession of lived personal experience', he recognises that it is time to reconsider the role of the subject in lyric poetry'. His reconsideration of 'the real person with history, biography, and psychology'[429] is a rephrasing of ideas as far back as W.R. Johnson's development of Mill's argument, that the lyric 'I' has not been concrete since the 'romantics taught us that any inner story … can reveal general truth'.[430]

Silliman's argument, 'if poems can't speak directly for an author, neither can they speak directly for a group',[431] requires further attention. Susan Schultz's argument, that deconstruction is taken by Language poets 'as intention' because they are 'seeking to unravel and deconstruct the syntax that confines us in a worldview characterised by consumerism and

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[422] Blasing, p. 4.
[423] Marjorie Perloff, 'Language Poetry and the Lyric Subject: Ron Silliman's Albany, Susan Howe's Buffalo', *Critical Inquiry*, 25. 3 (1999), 405–34, (p. 405).
[424] Perloff.
[425] Perloff.
[426] Jackson and Prins, p. 346.
[427] Jackson and Prins, p. 342.
[428] Perloff, p. 409.
[429] Perloff, pp. 410–412.
[430] Jackson and Prins, p. 96.
[431] Perloff, p. 412.

right-wing politics',[432] allows readers to take a deconstructive approach and give particular focus to the ideas of Levi-Strauss and Jacques Derrida. It is then possible to observe absolute interdependency between the concepts of individual and society. Language poets seem to reject the detached pathos of the lyric subject and the strong emotions that this form produces, reminiscent of Strauss's 'nostalgia for origins',[433] such as nature, as highlighted by Derrida who wrote: 'the other of the signified is never contemporary, it is at best a subtly discrepant inverse or parallel—discrepant by the time of a breath—of the order of the signifier' or 'the sign brings forth the signified'.[434] Applying these concepts to Silliman's remarks it is clear that the individual can speak for the group, because there can be no individual without society to think it. I argue that these concerns are essential when interpreting Armantrout's poetry as she repeatedly offers 'metaphors and fragments of pop culture [that] quarrel for our attentions';'[435] fragments that stand for the anxiety she feels about culture and society, which she provides through individual direct and indirect voices in an 'unself-consciousness' —as Adorno calls it, that gives 'language itself a voice'.[436]

The ideals that Language poetry shares with lyric poetry, such as its 'social antagonism', its 'game[s] …in acquiring self-consciousness',[437] and the poetic subject with history, biography, and psychology,'[438] might suggest that the dichotomies between Language and lyric poetry are more illusory than concrete. Despite arguments 'that almost all poetry has come to be read as essentially lyric',[439] and what Ethan Zuckerman coins the 'imaginary cosmopolitanism'[440] of our Internet driven twenty-first century, Language poetry has yet to become part of the canon of lyric poetry due to the differences in the emphasis it places on poetic subject and society. It cannot be denied that Language poetry takes hold of the 'voice' it gives to language by depersonalising it, not in removing or dismissing voice as earlier

[432] Susan M. Schultz, *The Tribe of John: Ashbery and Contemporary Poetry*, (Alabama: University of Alabama Press, 1995), p. 8.
[433] David Lodge Nigel Wood, *Modern Criticism and Theory*, (London: Taylor & Francis, 2014), p. 223.
[434] Judith Butler Jacques Derrida and Gayatri Chakravorty Spivak, *Of Grammatology*, (Baltimore: Johns Hopkins University Press, 2016), p. xxxiv.
[435] Pederson.
[436] Jackson and Prins, p. 343.
[437] Jackson and Prins, p. 344.
[438] Perloff, pp. 410–412.
[439] Jackson and Prins, p. 1.
[440] Chandler Daniel and Munday Rod, 'A Dictionary of Social Media', (2016), <//www.oxfordreference.com/10.1093/acref/9780191803093.001.0001/acref-9780191803093> [accessed 3 September 2017].

configurations of Language poetry might have suggested, but by changing the 'authority ascribed to [it]'.[441]

Language poetry, Armantrout's in particular, takes up what Jameson calls a 'new depthlessness', which refers to a contemporary culture where each commodity, including art, has become 'just another interchangeable image or fashion accessory to be purchased by the consumer to enhance their choice of lifestyle'.[442] Language poetry presents moments of the culture in which it is written for readers agreeing with the tenets it derives from Roland Barthes that 'the text is a tissue of quotations drawn from the innumerable centres of culture'.[443] At first glance, these moments are undeveloped and the fragmentation this causes between form and semantics is a quality of Language poetry, but Armantrout achieves something different with her less typically Language style. Moments and images are often presented and configured via line breaks; different sections exhibit internal cohesion, as well as an overall conceptual relation, unlike Language poetry, whose 'sentences' form 'completely independent units [that are] neither causally nor temporally related to the sentences that precede and follow it'.[444] Short sections often organise, as Armantrout notes, 'the same idea in different words: the moment versus the arrow of time'.[445] Armantrout's use of line breaks, which she notes is due to the 'influence of Williams',[446] contributes to the experience of time in her poetry and causes a paradox between the aesthetic appeal of moments and images and their 'signal of a kind of double take';[447] a technique that locates an overlap between the Language and lyric features in Armantrout's poetry.

3.3 Cognitive Poetics and Conceptual Integration Network Theory

Principles of cognitive poetics and Margaret Freeman's application of conceptual metaphor to poetic interpretations lend influence to the interpretation of the following poetry. Tsur's work is helpful because of his systematic observation and qualification of the difference

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[441] Perloff, p. 432.
[442] Simon Malpas, *The Postmodern*, (Oxford: Routledge, 2005), p. 119.
[443] Perloff, p. 407.
[444] Perloff, p. 412.
[445] Lerner.
[446] Paul Holler, 'An Interview with Rae Armantrout', *Bookslut - Features*, 2013. 02.02.2013 (2010), <http://www.bookslut.com/features/2010_07_016299.php> [accessed 27 February 2017].
[447] Calvin Pennix Deborah Escalante, 'Don't Back Away: An Interview with Rae Armantrout', *Poetry Reading Series*, 2017. 22.02.17 (2010), <https://www.chapman.edu/research-and-institutions/tabula-poetica/_files/tab-ivarmantrout.pdf> [accessed 22 February 2017].

between cognitive linguistics and cognitive poetics; he argues: 'cognitive linguistics shows very successfully how a wide range of quite different metaphors can be reduced to the same underlying conceptual metaphor, whereas cognitive poetics makes significant distinctions between very similar metaphors claiming that these differences make poetic expression unique'.[448] Tsur recognises and applies foundations from new criticism, formalism, and structuralism, providing the most versatile approach for understanding the potential cognitive effects in the poetic processing of metaphor; whereas, Freeman offers a meticulous example of a scholar successfully applying conceptual ideas of metaphor and 'blending' to poetic readings. Cognitive poetics remains the most developed branch of literary criticism for interpreting conceptual metaphor in poetry, but serious limitations become apparent when using it to understand the structure of Armantrout's poetry. To account for these gaps Fauconnier and Turner's conceptual integration network theory[449] will be used alongside principles from cognitive poetics. The following section will give an outline of some of the key principles of cognitive poetics and conceptual integration network theories.

3.4 Cognitive Poetics

Cognitive poetics has gathered momentum since the publication of George Lakoff and Mark Johnson's *Metaphors We Live By,*[450] though it retains some distant bases in the work of Donald A. Norman and David E. Rumelhart. Rumelhart was interested in how 'information is represented in human memory'[451] and wanted to create a formal story based on psychological processing, but his ideas remained undeveloped until Lakoff and Johnson. Peter Stockwell notes in his introductory account of cognitive poetics that its foundations 'lie most directly in cognitive linguistics and cognitive psychology';[452] essentially Stockwell argues that cognitive poetics is about reading literature through a cognitive science lens. Stockwell's book does not satisfactorily explain all the difficulties encountered in a relationship between cognitive linguistics and cognitive poetics—two fields that, as Tsur says, are at times 'diametrically

[448] Jonathan Culpeper Elena Semino, *Cognitive Stylistics: Language and Cognition in Text Analysis*, (Amsterdam / Philadelphia: J. Benjamins Publishing Company, 2002), p. 314.
[449] Gilles Fauconnier and Mark Turner, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*, (New York: Basic Books, 2003).
[450] Lakoff and Johnson.
[451] Elizabeth F. Loftus, *The American Journal of Psychology*, 88. 4 (1975), 691–94, (p. 691).
[452] Peter Stockwell, *Cognitive Poetics: An Introduction*, (London: Routledge, 2002), p. 4.

opposed',[453] though it does provide some basic structure in what is the sprawling and 'confusing state of affairs'[454] known as cognitive poetics.

The explicit relationship between cognitive science and literary studies is now several decades old and it is clear that many shared concerns exist; cognitive poetics makes an attempt to occupy this shared ground. The work of George Lakoff, Mark Turner, Mark Johnson, and Gilles Fauconnier is largely responsible for moving cognitive science in the direction of literature because of their focus on metaphor and other literary devices, which they insist are pervasive in everyday thought and language as well as literature. Mark Turner, in particular, helped foster a new respect for the 'literary mind' writing that: 'if we want to study the everyday mind, we can begin by turning to the literary mind exactly because the everyday mind is essentially literary'.[455] Despite this shift, many problems occur in the different aims of cognitive scientists and literary critics. In their 2004 paper 'Questions about Metaphor in Literature',[456] Gerard Steen and Raymond Gibbs argued that one of the problems of 'aligning literary criticism with linguistic metaphor analysis is the fact that critics aim to produce interesting, novel interpretations of literary works, whereas linguists aim to produce reliable analyses and explanations'.[457] This weakness of alignment is also raised by Tony E. Jackson who argues: 'despite regular, enthusiastic claims for radically new insights, the actual application of theories to texts has much too often produced interpretations that are painfully obvious'.[458] There are many other scholars who argue that the real benefit of interdisciplinary study between cognitive science and poetics lies not in finding new interpretations, but in making explicit the nature of how these interpretations arise and in gaining understanding into general phenomenology of mind. Margaret H. Freeman, who has been a key contributor to cognitive theories of poetry, argues that her aim in applying conceptual metaphor to Sylvia Plath's poetry is not to 'provid[e] new critical readings of the poem', but rather that it is to make 'explicit the implicit mappings that readers adopt in

[453] Reuven Tsur, 'Aspects of Cognitive Poetics', ed. by Elena Semino and Jonathan Calpeper (Amsterdam/Philadelphia: John Benjamins Publishing Company, 2003), 279–318.
[454] Nancy Easterlin, *A Biocultural Approach to Literary Theory and Interpretation*, (Baltimore: Johns Hopkins University Press, 2012), p. 196.
[455] Mark Turner, *The Literary Mind: The Origins of Thought and Language*, (Oxford: Oxford University Press, 1998), p. 7.
[456] Gerard Steen and Raymond Gibbs, 'Questions About Metaphor in Literature', *European Journal of English Studies*, 8. 3 (2004), 337–54.
[457] Ibid, p. 339.
[458] Tony E Jackson, 'Explanation, Interpretation, and Close Reading: The Progress of Cognitive Poetics', *Poetics Today*, 26. 3 (2005), 519, p. 528.

drawing conclusions about the poems that are shared by many literary critics'.[459] Freeman focuses on the blending process, as conceived by Fauconnier and Turner, and suggests 'possible interpretations are not always immediately apparent; the reader must actively work to understand the nature and relations of its cross-space connections';[460] an ideal shared by cognitive poetics and Language poetry as the reader is given the responsibility of shaping meaning and recognising the mental activities employed in interpreting poetry.

Alan Richardson helpfully summarises one of the key concerns of shared cognitive science and the field of cognitive poetics, taken up by this thesis, as an 'overriding interest in the active (and largely unconscious) mental processing that makes behaviour understandable'.[461] The interpretation of literary texts raises questions for readers, and the methods of cognitive poetics offers a way of finding a way to address those questions. This is particularly relevant, considering the Language writing foundations of Armantrout's poetry, as it highlights the interest in making explicit the unidirectional process of meaning creation between poet and reader. Arthur Jacobs argues that cognitive poetics seizes upon the potential offered by cognitive science of giving poetic interpretations a more 'empirical approach'.[462] Line Brandt concurs that cognitive poetics is able to move more empirically from 'the cultural particular to the cognitive universal',[463] an opportunity embraced by Armantrout who frequently states variations of her desire to address 'unresolved feelings or puzzlements' with her poetry. Tsur writes that cognitive poetics 'offers cognitive hypotheses to relate *in a systematic way* "the specific effects of poetry" to "the particular regularities that occur in literary texts"',[464] continuing that words 'designate "compact" concepts; even such words as "emotion" or "sadness" are tags used to identify the mental processes and do not convey the stream of information and its diffuse structure'.[465] Tsur's ideas of words as tags for more 'diffuse' systems of meanings describes the effect of Armantrout's hyper-extended metaphors, which reveal meaning over a course of poems or even volumes of poetry. Tsur's arguments highlight the longstanding goal of critics and readers to unravel meanings which remain

[459] Margaret H. Freeman, 'The Poem as Complex Blend: Conceptual Mappings of Metaphor in Sylvia Plath's 'the Applicant'', *Language and Literature,* 14. 1 (2005), 25–44, (p. 29).
[460] Margaret H. Freeman, 'The Poem as Complex Blend: Conceptual Mappings of Metaphor in Sylvia Plath's 'the Applicant'', *Language and Literature,* 14 (2005), 25–44, (p. 29).
[461] Easterlin, p. 200.
[462] Arthur M. Jacobs, 'Neurocognitive Poetics: Methods and Models for Investigating the Neuronal and Cognitive-Affective Bases of Literature Reception', *Frontiers in Human Neuroscience,* 9 (2015), 186.
[463] Donald R. Wehrs Mark J. Bruhn, *Cognition, Literature, and History,* (New York: Taylor & Francis, 2013), p. 7.
[464] Tsur.
[465] Tsur.

implicit or tightly packed in a text. Tsur, along with others such as Jacobs, Freeman, and Brandt are interested in finding a more empirical approach to the interpretation of literary texts.

3.5 Conceptual Integration Networks

Gilles Fauconnier and Mark Turner's theory of conceptual integration networks offers a valuable tool for interpreting the semantic structure of Armantrout's poetry. According to Fauconnier and Turner, 'in a conceptual integration network, partial structure from input mental spaces is projected to a new blended mental space which develops a dynamic (imaginative) structure of its own'.[466] Armantrout's poetry frequently offers an initial image or metaphor, which is broken, subjected to variance, and repeated. In this way, images and themes, which at first appear disparate, join to form a network; this network is created by the projected understandings of the poet and reader on to the language or image. The image or metaphor becomes extended either by time, space or cultural differences. This means that in order to process the language cognitively, readers have to compress the information and understandings created by the image into a smaller space—Fauconnier and Turner call these 'input spaces'. In their paper, 'Conceptual Integration Networks', they argue that studies focusing on cross-domain mappings in metaphor and analogy do not, by themselves, satisfactorily explain the data that arises: 'as we move through the data that involves both cross-space mapping and conceptual integration, we will remark that much of it is neither metaphoric nor analogical'.[467] Armantrout's incomplete metaphors take meaning from myriad sources, and over the course of her poetry an individual meaning structure is created in a like manner to Fauconnier and Turner's definition of a complex blend; they argue that this process occurs when 'central inferences, emotions, and conceptualisations, not explained in currently available frameworks, [are] constructed dynamically in a new mental space [that] draws selectively from different and incompatible input frames to construct a blended space that has its own emergent structure and that provides central inferences'.[468] Our understandings of a given concept are *re*-formed by selectively mapping aspects of other concepts on the one we are trying to grasp; a technique that will be highlighted in the following discussions of Armantrout's hyper-extended metaphor.

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[466] Nadel.
[467] Fauconnier and Turner, p. 135.
[468] Fauconnier and Turner, p. 136.

The role of imagination is a key unifying feature of poetic interpretation and conceptual integration networks, which is demonstrated by Fauconnier and Turner's recognition of Arthur Koestler's book *The Act of Creation*,[469] particularly the riddle of the Buddhist monk contained within it, as a forerunner to their theory of blending. Fauconnier rephrases the riddle from Koestler as follows:

> A Buddhist monk begins at dawn one day, walking up a mountain, reaches the top, at sunset, meditates at the top for several days, until one dawn when he begins to walk back to the foot of the mountain, which he reaches at sunset. Making no assumptions about his starting or stopping or about his pace during the trips, prove that there is a place on the path which he occupies at the same hour of the day on two separate journeys.[470]

Fauconnier demonstrates that the monk becomes two separate people on two separate journeys that come to represent two input spaces, which are used to configure a new blended space. This new blended space remains 'hooked up to the input spaces' and contains an 'emergent structure, not in the input spaces',[471] and, because there are too many unknowns about distance or pace, we can make no 'assumptions' to find a concrete mathematical answer to the riddle. The solution can only be achieved by *imagining* the monk as two separate monks: one monk walks up the mountain on one day, which equals one input space, and another monk walks down the mountain on another day to equal the second input space. These two input spaces are blended into a third space, a blended space, which contains the instances of the mountain from each input space in one single mountain, and at the top and bottom of the mountain in the blended space is the same monk on the same day who begins walking and must, at some point, meet himself, see Figure 1.[472]

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[469] Arthur Koestler, *The Act of Creation*, (London: Arkana, 1964).
[470] Gilles Fauconnier, *Mappings in Thought and Language*, (Cambridge: Cambridge University Press, 1997), p. 151.
[471] Fauconnier, pp. 154–155.
[472] Fauconnier, p. 154.

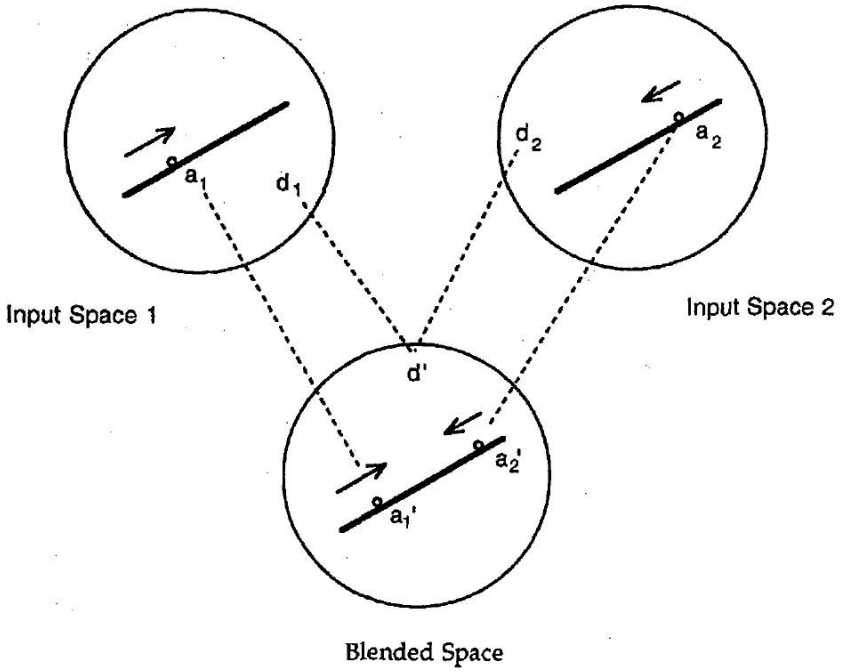

***Figure 1**: 'Conceptual Blends' - Gilles Fauconnier*

The fundamental constituent of this example is the part that imagination plays in blending abstract and concrete elements of different concepts. Fauconnier argues that this happens continually in all aspects of our lives; that it is largely unconscious and beyond our control. He argues it 'is at the heart of the unique human cognitive faculty of producing, transferring, and processing meaning'.[473] Koestler calls these patterns of imaginative blending 'bi-sociations', [474] which he says are common to the arts and the sciences. These shared patterns foster interdisciplinarity and are essential to promoting originality. Poetic imagination creates new realities by blending abstract with concrete, known and unknown, whilst retaining enough information from different input spaces to allow the analysis and comparison of ideas. Historically, these ideas have been employed by critics under various different names and guises; what the conceptual integration network theory offers is an explicit theory containing systematically structured and empirically applied sets of conceptual tools called, by Fauconnier, 'optimality principles and pressures'[475] presented helpfully by Freeman in brief as:

[473] Fauconnier, p. 1.
[474] Howard E. Gruber, *The American Journal of Psychology,* 79. 1 (1966), 163–65, (p. 163).
[475] Fauconnier, p. 186.

- integration (several events manipulated into a single unit);
- topology (the relation of elements across spaces);
- web (the creation of appropriate connections among spaces);
- unpacking (the capability of reconstructing the network connections from the blend);
- good reason (the pressure to find significance for any element that appears in the blend);

and the five pressures are:

- non-disintegration (neutralise projections and topological relations);
- non-displacement (do not disconnect web connections);
- non-interference (avoid projections that defeat each other);
- non-ambiguity (do not create ambiguity that interferes with computation);
- backward projection (avoid reconstructing a projection that would disrupt the integration inherent in that input).[476]

In Armantrout's poetry, readers have to unpack implicit meanings from cross-space inputs in order to effectively unpack what Tsur defines as 'compact concepts'. These inputs are affected by the principles and pressures, as listed above, and the terms and application of these will be referred to in subsequent poetic analysis.

3.6 Conceptual Integration Network Theory in *Versed*

According to the conceptual integration network theory the space underneath metaphor is structured by what Fauconnier and Turner term 'mental spaces'. The theory of mental spaces is an invaluable tool in the interpretation of Armantrout's poetry because it attempts to make explicit the 'underlying structures' she is interested in. Fauconnier and Turner's work 'provides a general model for studying the rich interplay between cognitive connections and natural language'[477] and recognises that these connected mental spaces are not 'specifically

[476] Margaret H. Freeman, 'The Poem as Complex Blend: Conceptual Mappings of Metaphor in Sylvia Plath's' the Applicant", *Language and Literature*, 14. 1 (2005), 25, 29–30.
[477] George Lakoff Claudia M. Brugman, Yo Matsumoto, Errapel Mejias-Bikandi, Laura A. Michaelis, Gisela Redeker, Jo Rubba and Eve Sweetser Gilles Fauconnier, *Spaces, Worlds, and Grammar*, (Chicago: University of Chicago Press, 1996), p. 8.

linguistic';[478] this offers readers a way to structure the gap that Armantrout observes between what we perceive and the actual nature of reality, or her '*thing* and *idea*'. [479] As Armantrout notes, she is 'seldom using proper metaphors at all' often 'juxtapos[ing] two images or two types of discourse to see what sparks fly'.[480] This 'restless activity'[481] means that the reader has to actively work to compress and create meaning from the myriad mental spaces underneath these fragmented metaphors. Armantrout's repeated evolution of metaphors forces us to compress ideas which, as Fauconnier and Turner argue, is 'the ultimate goal of the whole blending process'.[482] Compression is crucial in conceptual blending because it allows us to manageably process input spaces or ideas that are related, but which may be separated from each other, for example by long distances of time or space. Compression allows us to reduce the 'conceptual complexity of inputs',[483] in order to achieve human scale.

In the following section poems will be treated as individual complex blends: the poem will be interpreted as a result of blending two or more input spaces to create a new blended space.[484] Multiple input spaces mean that 'governing principles frequently compete with each other'[485] and, as such, applying Fauconnier's optimality principles and pressures, provides 'strategies for optimising emergent structures'[486] as the poem discovers new associations not contained in any of the inputs. Using the conceptual integration network theory to interpret Armantrout's poetry allows readers to navigate the endlessly renewing loop of seemingly unconnected images offered by metaphor in her poetry—images which seem again to be 'like one swallowing another, the bulge of the antelope in the boa's midriff',[487] and uses this system to reform the metaphor.

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[478] Fauconnier Gilles and Turner Mark, 'Conceptual Integration Networks', *Cognitive Science*, 22. 2 (1998), 133–87, (p. 134).
[479] Armantrout and Press, p. 55.
[480] Adair.
[481] Jackson and Prins, p. 341.
[482] Wolfram R. Keller Marcus Callies, Astrid Lohöfer, *Bi-Directionality in the Cognitive Sciences: Avenues, Challenges, and Limitations*, (Amsterdam / Philadelphia: John Benjamins Publishing Company, 2011), p. 126.
[483] Marcus Callies, p. 126.
[484] See Figure 1.
[485] Mark Turner Gilles Fauconnier, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*, (New York: Basic Books, 2003), p. 311.
[486] Gilles Fauconnier.
[487] Beckett, West, and Drake, p. 13.

3.7 Conceptual Integration in Armantrout

The thing that makes us human,
monkey-see, monkey-do speed-up,
a "call to mimesis",
now comes from everywhere at once.
*
The cumulus
and the white flash
from under
the mocking-bird's wing
make what?

*
Repeat wake measurement.
"Check to see"

"Check to see",
birds say,
"that enough time
has passed".

Armantrout's poem 'Translation'[488] is, as readers have come to expect by the time we reach its position as the final poem in the first section, not as it first appears, and it contemplates one of the things that makes us human—our ability to imitate. As the poem progresses, it becomes clear that the poem contains allusions from T.S. Eliot, a connection she is open about after her first introduction to modern American poetry: 'I liked Eliot … I started imitating him'.[489] Armantrout acknowledges and imitates Eliot in 'Translation' and in other poems in the volume. At times these interactions are deliberate while others occur more synchronistically; whatever the nature of their occurrence these connections are fitting given that both poets share several deep concerns. At this point, Armantrout appears to follow Eliot's belief that 'the progress of the artist is a continual extinction of personality',[490] the poet must 'abandon nothing' that has gone before and yet must recognise that 'the material of

[488] Armantrout, 'Translation', in *Versed,* p. 64.
[489] Carbajosa.
[490] Eliot, p. 53.

art is never quite the same'.[491] Eliot argued that poetry is not about the individual life and experience of the poet, but of the poet's respect, synthesis and 'modification' of the tradition that has gone before, or as he later says in his essay 'Philip Massinger', 'immature poets imitate, mature poets steal'.[492] Armantrout borrows Eliot's lyrical self-reflection on the fragile nature of personal experience in a fractured society and recognises that this fragmentation results in a lack of time to make sense of our experience or memories. Though their conclusions often diverge, a shared desire to reflect universal elements of human experience remains.

'Translation' has a cumulative structure reflecting the pattern of time passing: the first stanza has four lines, the second five, and the final six, following the introduction of the theme of time with 'speed up' in the first stanza to its repetition with 'time has passed' in the final one. The conflicted phrase: 'monkey see, monkey do speed-up' following the first line transforms the monkey into a metaphor for humans, and by doing so highlights the fundamental difference between them: 'we learn new behaviours according to the old saying "monkey see, monkey do", the surprise is that most monkeys and for the most part most animals, cannot'.[493] The missing grammar in the second supplemented part of the well-known phrase 'monkey do speed-up', provides a deviation that echoes the language of direct instruction, thereby placing us in the position of the monkey. The phrase allows Armantrout to suggest, in agreement with evolutionary biology, that the monkey is able to learn elements of the process without any real understanding, and since the monkey is now a metaphor for humans this makes it possible for Armantrout to suggest that humans are mindlessly imitating each other. The phrase alludes to the evolution of a complex language, another skill as Noam Chomsky famously argued, that 'makes us human'[494] and one which was preceded by social learning, drawn upon in this reference. Evolutionary biologist Mark Pagel refers to social learning as 'visual theft', language he argues 'evolved to solve the crisis of [visual theft]'. [495] This represented a crisis because humans learning via imitation were able to benefit from each other's knowledge, which in Neanderthal times could mean being beaten to resources as well as being a source of conflict. Paradoxically, developing a system of communication and

[491] Eliot, p. 51.
[492] Thomas Stearns Eliot, *The Sacred Wood and Major Early Essays*, (New York: Dover Publications, 1998), p. 125.
[493] Mark Pagel, *Wired for Culture: The Natural History of Human Cooperation*, (London: Penguin Books Limited, 2012), p. 311.
[494] Mike Beaken, *The Making of Language*, (Edinburgh: Edinburgh University Press, 1996), p. 5.
[495] Pagel.

language meant information could be shared selectively and cooperatively making language a tool for both collaboration and defence.

Mapping the monkey metaphor provides a number of mental spaces, essential to the construction of the different input spaces that are used in the creation of the final blended space. Fauconnier argues 'mental spaces operate in working memory but are built up partly by activating structures available from long-term memory'.[496] The mappings underlying the metaphors provided in the poem activate the wider conceptual understandings of the world that arise from lived experiences.

Mappings for the monkey metaphor:

Monkey	metaphor for	human
monkey see	synecdoche for	imitation
monkey see monkey do	synecdoche for	social learning/ visual theft
monkey do speed up	synecdoche for	foolishness

Using the techniques of conceptual blending, mimesis or imitation provides the topological frame for the blend and projecting components of imitation, representation, and expression. The theme of imitation and mimicry, introduced in the first section, continues through a number of references in all three stanzas: 'call to mimesis', 'mocking-bird', and the parrot-like repetition of 'check to see'. The first, a 'call to mimesis', if we are to take a fairly broad definition of mimesis as imitation, is a 'call' that includes the reader in an oxymoronic appeal—the phrasing echoes the familiar saying 'call to arms' and the replacement of the word arms with 'mimesis' causes a subtle disruption in reader expectations forcing us to question what we are being called to arms for. This 'call to mimesis' could be a supplication to question literary imitation, a twist on Eliot's well-known hypothesis in his 1919 essay 'Tradition and the Individual Talent'[497] in which he argued that artists should 'conform [to create] an ideal order among themselves, which is modified by the introduction of the

[496] Fauconnier and Turner, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*, p. 102.
[497] Eliot, *The Sacred Wood: Essays on Poetry and Criticism*.

new';[498] this coherence included an element of mimesis in respect of the previous literary canon. Eliot felt that artists should respect their predecessors to produce art that effects an incremental progression; a respect for the 'pastness of the past … its presence'[499] and Armantrout questions this again in the final stanza. She rejects the timeless and the temporal together', which is what Eliot argued 'makes a writer traditional',[500] and instead chooses to uphold the imitation with the birds repeated call. Importantly, 'the call' foreshadows the call of the other birds in the poem and provides integration of all the birds according to Fauconnier's optimality principles. In the first stanza we are expected to take the instructions literally. We are being asked to comply with and replicate 'mimesis', the norm, 'everywhere at once' without questioning or understanding the process; 'monkey', the intensity of this situation indicated by 'monkey do speed-up', and the replication existing 'everywhere at once' gives the section a more sinister tone, which questions the wisdom of whether reader or author should be responding to this appeal.

In the second section, the connection to Eliot becomes more apparent with the introduction of the 'mocking-bird'; Armantrout imitates Eliot via metaphorical mimesis using the bird and the cloud from the first poem in his *Four Quartets*— 'Burnt Norton':

> And they were behind us, reflected in the pool.
> Then a cloud passed, and the pool was empty.
> Go, said the bird, for the leaves were full of children,
> Hidden excitedly, containing laughter.
> Go, go, go, said the bird: human kind
> Cannot bear very much reality.[501]

Armantrout brings Eliot's philosophical ideas on time, language, and reality into the poem and connects them to illusion with 'the cumulus'; the reference to the cloud in proximity to the bird cements the poem's association to Eliot. This means that Armantrout's 'cumulus' is able to borrow meaning from Eliot; it hides the sunlight, which in 'Burnt Norton' allows a glimpse into the illusion of time, and conveys the cloud's capacity to impede vision. In Armantrout, the 'cumulus' and the deception introduced with the mockingbird indicates a

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[498] Eliot, *The Sacred Wood: Essays on Poetry and Criticism,* p. 50.
[499] Eliot, *The Sacred Wood: Essays on Poetry and Criticism,* p. 49.
[500] Eliot, *The Sacred Wood: Essays on Poetry and Criticism,* p. 49.
[501] Thomas Stearns Eliot, *The Complete Poems and Plays, 1909-1950,* (New York: Harcourt, Brace, 1952), p. 118.

mistrust of communication; the bird's song, or indeed words, highlight the dual nature of language to cause conflict as well as providing a means for collaboration.

At this point two of the input spaces become apparent: the first input space is structured by the mental spaces created by the mappings of the 'mocking-bird' from Armantrout, and the second by the thrush from Eliot's poem. The 'mocking-bird' is deceptive, named after its 'ability to imitate the songs of other birds',[502] with its 'white flash' originally thought to be 'a social signal indicating uneasiness'[503] but later evolving into a method of misleading prey. Eliot's bird, however, is 'the messenger of truth'[504] which leads us to instances of reality in the timeless garden. Both input spaces share the cloud's proximity to the bird and in both instances the cloud is likely to represent obstructed vision. Armantrout ends this section asking us directly what these illusions or imitations mean, questions which she feels that, unlike the monkey, we should be asking.

Mappings for the bird spaces:

Call	metonymy for	bird call
mocking-bird	metaphor for	imitation
check to see	synecdoche for	parroting/ imitation

The mocking-bird connects sections two and three of Armantrout's poem, although only the less specific 'birds' rather than 'mocking-birds' are mentioned, potentially making the conclusions of this final section more solemn. The birds repeated call 'check to see/ check to see' echoes the call of Eliot's thrush 'Go, go, go' to draw on his poetic exploration of time and language:

> Words move, music moves
> Only in time; but that which is only living
> Can only die. Words, after speech, reach
> Into the silence.

[502] Robin W. Doughty, *The Mockingbird*, (Texas: University of Texas Press, 1995), p. 49.
[503] Terry Maxwell, 'Mockingbird Mystery Lies in Flashing Actions', 2017, 6th January (2007), <http://archive.gosanangelo.com/news/mockingbird-mystery-lies-in-flashing-actions-ep-442821110-358479121.html> [accessed 1 January 17].
[504] University of the South, *The Sewanee Review*, (T. Hodgson, 1952), v. 60, p. 57.

> … Words strain,
> Crack and sometimes break, under the burden,
> Under the tension, slip, slide, perish,
> Will not stay still. Shrieking voices
> Scolding, mocking, or merely chattering,
> Always assail them.[505]

The 'mocking-bird', 'birds', and Eliot's bird are connected via their repeated calls; this allows us to create a third blended space in which the distance between texts, as well as the differences in the birds, have been integrated into a single unit—they become one bird asking the same question with a completely different vocabulary. This is made possible because the question has been structured by the components given by all three birds across both poems. In the birds 'check to see' there is an element of doubt, or even mockery, in whether enough time has passed to perfect her mind into that of the 'mature poet's'[506] mind and a mockery of the idea that words could exist anywhere *but* in time where they are subject to the historical and experiential shifts, turns, and changes of linguistic development.

In the third section, Armantrout revisits Eliot's ideas of time, imitation, and language. For Eliot, time is destructive to language or 'words' which exist in time and create reality; time causes them to 'crack', 'break', and 'perish', and for this reason he tries to move language beyond time by paying attention to 'the silence'. Moving outside time is attempted by both Eliot and Armantrout and invites a lyrical interpretation with its inclusion; as Baker argues, 'time is an inevitable, central element in lyric poetry, even poetry that intends or proposes to be outside time's frame'.[507] Despite Eliot's idea that 'only in perfection of form or pattern, such that it seems to be eternally present like the whole of time, can the poet be free from the recalcitrance of words',[508] he never successfully evades time. Eliot believes that moving beyond time contributes to the ideal conditions under which words can provide solid and faithful representations. Armantrout's suspicion of words and time is far more obvious; indeed, she has made no secret of this mistrust saying that language produces 'often unproductive work … [and she has] an unflagging need to make her reader aware of it'.[509]

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[505] Eliot, *The Complete Poems and Plays, 1909-1950,* p. 122.
[506] Eliot, *The Sacred Wood and Major Early Essays,* p. 53.
[507] Baker, p. 31.
[508] Francis Otto Matthiessen, *The Achievement of T. S. Eliot: An Essay on the Nature of Poetry*, (New York: Houghton Mifflin company, 1935), p. 90.
[509] Ibid, p. 403.

She conceptualises to language with the scientific reference of a 'wake measurement', which refers to the flow of disturbed air or liquid behind a moving object. In this instance, the subsequent references to 'birds' and 'time' in the section suggest that the moving object is language and its relationship to time returns us to the first section's ideas of social learning and imitation. Armantrout revisits, via imitation, the literary questions and canons of Eliot's time and asks whether 'enough time has passed' for the patterns, or 'wake measurements' left behind by poetic language, to have successfully moved beyond the restrictions of time and the illusory truth that language creates.

On the surface it might appear that Armantrout agrees with Eliot's statement, 'Only through time, time is conquered';[510] a statement that reveals his belief that poets must respect and borrow from the entire or 'whole existing order' of literary history, not only their 'immediate predecessors'.[511] It is unclear whether Armantrout wishes to perpetuate this idea or whether she is asking if enough time has passed for her to borrow successfully from Eliot; more likely is Armantrout's use of allusion and science work to suggest that borrowings must be from all of our experience, not just poetic tradition. Nevertheless, neither Armantrout's rephrasing nor Eliot's original question receive a substantial answer because, in a like manner to wake turbulence, there is 'still no adequate theoretical account for the whorls and eddies that appear in waterfalls, whirlpools, and wakes'.[512] Language too creates distinct patterns over time as lexical items peak and recede and, given enough time, we may be able to better understand the role these patterns play in constructing reality.

Armantrout, unlike Eliot, 'find[s] the instabilities of language both troubling and attractive',[513] a conflict evident in 'A Resemblance':

> As a word is
> mostly connotation,
>
> matter is mostly
> aura?

[510] Eliot, *The Complete Poems and Plays, 1909-1950*, p. 120.
[511] Eliot, *The Complete Poems and Plays, 1909-1950*, pp. 48–50.
[512] Stephen H. Kellert, *In the Wake of Chaos: Unpredictable Order in Dynamical Systems*, (Chicago: University of Chicago Press, 1993), p. 7.
[513] Wesleyan, 'A Conversarion with Rae Armantrout', *A Versed Reader Site*, 2017. 30.01.2017 (2011), <http://versedreader.site.wesleyan.edu/files/2011/08/A-Conversation-with-Rae-Armantrout.pdf>. [accessed 7 January 2017]

Halo?

(The same loneliness
that separates me

from what I call
"the world.")
*
Quiet ragged,
skirt of dust

encircling a ceramic
gourd.

*
Look-alikes.

"Are you happy now?"
*
Would I like a vicarious happiness?

Yes!

Though I suspect
yours of being defective.

forced[514]

As the title suggests, Armantrout is interested in ideas of similarity and resemblance particularly when they occur in rhetorical devices such as simile and metaphor. The first of the four sections draws attention to the arbitrary and subjective nature of words. These ideas are introduced via a partial simile, which despite digressing from the expected path of either simile or metaphor remains closer to simile, because we can reverse parts of it 'without loss or change of meaning'.[515] Armantrout later concedes that these poetic devices are necessary to keep the reader 'happy', but the addressee for the question remains absent. Armantrout suggests that if a word is two things, its arbitrary meaning along with its 'connotation'—the

[514] Armantrout, 'A Resemblance', in *Versed*, p. 10.
[515] Richard Moran, 'Seeing and Believing: Metaphor, Image, and Force', *Critical Inquiry*, 16. 1 (1989), 87–112, (p. 93).

additional experientially understood value, then she proposes using scientific vocabulary alongside Cartesian paradox; surely physical matter, 'the electrons, protons, and neutrons, [the] fundamental particles from which all matter is made',[516] can be equivalent to soul, which is suggested by the 'aura/Halo?' simile.

Cognitive scientists have frequently used the concepts of auras or halos as metaphors for the soul. Douglas Hofstadter, for example, describes aura as the idea that 'each of us is intrinsically defined by a unique incorporeal essence [which represents] our immortal souls'.[517] This argument for the soul, as equivalent to 'matter', 'aura', and 'halo', can be confirmed in her use of parenthesis in the closing lines of this section: '(The same loneliness/that separates me/from what I call/ "the world.")', a theme that Armantrout constantly revisits in this volume[518] and an inclusion that marks isolation in its inability to find likeness or 'resemblance' with other 'auras' in the world; particularly if we take Hofstadter's understanding of the human soul as being collective or 'distributed over many a brain'.[519] In comparing the soul, or the 'Halo', to matter Armantrout approaches more materialistic understandings of the soul similar to those offered by scholar Daniel Dennett, who suggests that the soul is made up of neurons; this makes it easier to 'explain the structure and operation of that kind of soul whereas an eternal, immortal, immaterial soul is just a metaphysical rug under which you sweep your embarrassment for not having any explanation'.[520] Armantrout appears curious about the distinction between the physical body and self in the same way that there is an element of mistrust and curiosity about words and their connotations. The key word in this first section is 'mostly', which maintains uncertainty; words are predominantly comprehended by the personal meanings individuals have ascribed to them. Additionally, everything that makes up the world is 'mostly' constructed by thoughts, feelings, and experiences that surround it, to create its 'aura' or 'halo'. These circular patterns and shapes introduce one of the main topological features of the poem—creating relations across the different input spaces of individuals and humankind according to Fauconnier's optimality principles, features that can be considered literally and

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[516] Michael de Podesta, *Understanding the Properties of Matter*, (London / New York: Taylor & Francis, 2002), p. 8.
[517] D.R. Hofstadter, *I Am a Strange Loop*, (New York: Basic Books, 2008), p. 358.
[518] See page 4. 'This sense of /my senses being mine' and 'how to distinguish one/ light from the next',' from the poem 'Pleasure'.
[519] Douglas R. Hofstadter, *I Am a Strange Loop*, (New York: BasicBooks; [London: Perseus Running, distributor]), (2007), p. 274.
[520] Dr. Ken Hayworth, 'Preserving and Mapping the Brain's Connectome', in *Global Future International Congress*, (New York, Lincoln Center: Global Future 2045 International Congress, 2013).

metaphorically.

The first lines of the poem lead us to the expression of the metaphor: aura is soul. If words are 'mostly' subjective in meaning, and subjective meaning can only be ascertained through lived experiences, this means that lived experiences can only be achieved by humans existing in space; if, in order to exist in space, humans are constructed of matter it means that matter can contain subjective meaning and, by definition, subjective meaning is distinct from that of other humans. Therefore, the mappings for the scenario of matter, as equivalent to the soul, could progress as follows:

matter	metaphor for	human
	metaphor for	aura
	metaphor for	halo
aura	metaphor for	soul
	simile for	separation
halo	metaphor for	soul
	simile for	separation
world	metaphor for	humankind

The second section of the poem is distinct from the other sections and although Silliman disputes its reference 'straight out of Eliot … even considering the dust',[521] it is not in the 'dust' that Armantrout echoes Eliot, but in the paradox between stillness and movement, music and silence; the same paradox that makes this metaphor an intense example of a lyric 'moment of pure realisation',[522] or as Eliot called them 'still point[s]'.[523] Traces from Eliot's poetry, particularly from *Four Quartets* and 'Ash Wednesday', are instantly recognisable in language, tone, and theme. The 'Quiet, ragged/skirt of dust' alludes to the 'unheard music'[524]

[521] Ron Silliman, 'Trying to Read a Book by Rae Armantrout', ed. by Ron Silliman (Blogspot.co.uk, 2009).
[522] Jackson and Prins, p. 186.
[523] Eliot, *The Complete Poems and Plays, 1909-1950*.
[524] Eliot, *The Complete Poems and Plays, 1909-1950*, p. 190.

and 'dancers' from Eliot's 'Burnt Norton'.[525] Movement is indicated via 'skirt of dust', which travels around the gourd, an ancient symbol of ceremonial dance.[526] In Eliot, the gourd is a symbol of movement and spiritual transformation in the 'Chinese jar'[527] from 'Burnt Norton', and the 'fruit of the gourd'[528] from 'Ash Wednesday'. Chinese jars were often shaped like gourds, adorned with intricate patterning suggestive of movement. Gourds were also used ceremonially after Ash Wednesday carnivals when 'celebrants drank wine from gourds'.[529] Armantrout, in contrast to Eliot, does not undergo spiritual transformation nor is her moment of realisation complete, but instead she offers further isolation and futility with the word 'ragged'. This word indicates damage to the figure dancing in its circular loop of repetition without resolution, which foreshadows the concerns in the remaining sections of the poem.

The lyrical nature of this section and the partial references to Eliot with the movement/stillness paradox, and the 'dust' which Silliman disputes as a reference to Eliot's 'Ash Wednesday', suggest that the 'quiet ragged/skirt of dust' is a metaphor for an individual travelling through life—the 'gourd' becoming a metaphor for a death as a funerary urn: 'Remember that you are dust, and to dust you shall return'.[530] The repeated circular motion and its element of futility draws together the ideas of hopeless subjectivity of meaning in the 'connotation' of words, and the separation that comes from a Hegelian self-conscious 'subject' in this active, self-determining relation to itself in all experiences';[531] the present is relational, subjective. The proximity of 'word' and 'world' offer the potential to draw other modernist allusions to the instability of language, such as those of Joyce, whose continual play and mockery of language in *Ulysses*, 'I do not like that other world. Please tell me what is the meaning of that word',[532] betrays the mistrust of language that he shares with Armantrout and his fear of what can be 'lost in the transition from ether to paper';[533] a transition that Armantrout's earlier references to ventriloquy demonstrate her own intense interest in, but instead of a display of apprehension, she attempts to take hold of this problem

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[525] Eliot, *The Complete Poems and Plays, 1909-1950*.
[526] Brian Swann, *Voices from Four Directions: Contemporary Translations of the Native Literatures of North America*, (London: University of Nebraska Press, 2004).
[527] Eliot, *The Complete Poems and Plays, 1909-1950*, p. 194.
[528] Eliot, *The Complete Poems and Plays, 1909-1950*, p. 97.
[529] Mary Reed, *Fruits and Nuts in Symbolism and Celebration*, (California: Resource Publications, 1993), p. 79.
[530] Kathy Coffey, *Sourcebook for Sundays, Seasons, and Weekdays: The Almanac for Pastoral Liturgy. 2013 (Year C-1)*, (Chicago: Liturgy Training Publications, 2012), p. 102.
[531] Robert B. Pippin, *The Persistence of Subjectivity: On the Kantian Aftermath*, (New York: Cambridge University Press, 2005), p. 2.
[532] James Joyce and Declan Kiberd, *Ulysses*, (London: Penguin Books, 2000), p. 95.
[533] Joyce and Kiberd, p. xxxv.

by collecting scraps found in the ether 'over the course of days or weeks, [to see] what emerges, what sticks to what, what sort of units form'.[534] The circular repetition of movement by this argument becomes a constant revisiting and criticism of what Eliot called 'tradition' and the individual's place within it.

Circular mappings and shapes are strongly integrated into the blend; the circular form of halos and auras closely positioned next to the 'world' have come to represent people and their souls, which are not only distinct to them, but form individual spheres that separate. The element of futility and the reference to Eliot offers an individual trying to reach an understanding or spiritual transformation, but never reaching it. Armantrout provides literal depictions of circular objects and movements, as well as directing the reader in semantic loops, and the third and fourth sections return the reader to the beginning, while demonstrating her frequent technique of question and response. The third section comments on the simile of 'aura/Halo' from the first, with the phrase 'Look-alikes'; a wry joke on the expected use of rhetoric devices in poetry that has been put in to keep someone, presumably the reader, 'happy', indicating the poet's uncertainty of their necessity.

In the final section the poet provides a more straightforward question and response; she would like to experience the second-hand or 'vicarious' satisfaction that comes from constituting and understanding the world via poetic exploration, but finds that moving through metaphor and simile in this way only allows a fake or 'defective' happiness. As Stephanie Burt notes, Armantrout is vigilant 'to the difference between *like* and *is*, to the way that the human mind, that resemblance-finding machine, can not only reveal but mislead'.[535] Armantrout leaves the poem unresolved, and the lack of punctuation on the final word 'forced' draws the reader's awareness to a number of unanswered questions around the understanding of language, in terms of individual experiences and 'forced' poetic techniques and interpretations. This draws attention to Armantrout's own unfinished business with language, and to those of Eliot and Joyce, specifically what happens when language moves through time, subjectivity, and on to paper:

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[534] Perloff.
[535] Stephanie Burt, '"Like: A Speculative Essay About Poetry, Simile, Artificial Intelligence, Mourning, Sex, Rock and Roll, Grammar, and Romantic Love, William Shakespeare, Alan Turing, Rae Armantrout, Nick Hornby, Walt Whitman, William Carlos Williams, Lia Purpura, and Claire Danes." ', *American Poetry Review 43, no. 1: 17-21,* (2014), <https://dash.harvard.edu/handle/1/22686179> [accessed 12 January 2017].

Single cells
become like-minded,
forming a consensus
or quorum.
Bioluminescence and virulence
are two ways
we describe the feeling
they share then.
With effort,
humans can approach
this condition.
"Synchronised Swimming
has afforded me
a wonderful life,"
says one informant.
Why not?
I too would like
to exert power
over time,
to pass it,
aggressively, dramatically,
and forget all about it
until even
the meaning of the word
"pass"
gets lost
in a rosy glow.[536]

The poem 'Pass' appears towards the end of the second section of the volume 'Dark Matter'; in this section Armantrout's cancer diagnosis manifests in the structure and content of her poetry, becoming evident in her repeated engagement with scientific metaphors of the cell. Poetic explorations of cells continue as the building blocks of an individual's body and of their consciousness, and Armantrout writes 'as we know from physics, and from neuroscience any single object we will ever see is a buzzing multiplicity which we have found it practical to identify as a single entity. We ourselves are colonies of cooperating cells'.[537]

[536] Armantrout, 'Pass', in *Versed*, p. 117.
[537] B Lerner, (2011) Rae Armantrout. Bomb 114/Winter

The lingering metaphorical concept from the nineteenth century, of cells as 'building stones or elementary autonomous organisms from which larger organisms are composed',[538] has been repeatedly explored by poets[539] in light of scientific ideas on concepts of a cell and how cells might compose the individual. In Francis Crick's book *The Astonishing Hypothesis: The scientific search for the soul,* he theorises that '"You," your joys and your sorrows, your memories and your ambitions, your sense of personality and free will, are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules.'.[540] In the earlier poem 'A Resemblance', Armantrout follows Crick's belief that consciousness is not necessarily related to something transcendental, such as the soul, which in itself doesn't have to be transcendental, but to the material body—the vulnerability of which becomes evident in 'Pass'. As the body seems to become more vulnerable, the solidity of Armantrout's ideas on the soul, or even what happens to an individual's cells after they 'pass', seem suddenly less sure.

In 'Pass', Armantrout deviates from her usual short stanzas, which often helps readers designate the different sources of her images and metaphors, as her ideas are not separated on the page and equally their structural proximity reflects a closer semantic relationship. In this poem, Armantrout explores scientific ideas on quorum sensing in bacteria, as well as personifying 'single cells' as individuals that form a 'like-minded' group. These two different ideas are compressed into a single unit to become the main integrating feature of the blend, with similarity introduced as the main topological frame. Armantrout extends the poetic technique and metaphor from 'A Resemblance' using simile to assist in the expression of the metaphor: cells are individuals, which is cemented with the lines 'a consensus, /or quorum'. According to cell biology 'the individual cell is the minimal self-reproducing unit of living matter and it consists of a self-replicating collection of catalysts'.[541] Without the need to

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[538] R Reynolds, *The Cell's Journey: From Metaphorical to Literal Factory*, Endeavor Vol. 31, Issue 2, (2007), p. 65.

[539] Examples include: H.D.'s poem 'Cities' in which she 'refers to the cell as a singular and microscopic building block of matter'. -Rochelle Rives, *Modernist Impersonalities: Affect, Authority, and the Subject*, (New York: Palgrave Macmillan US, 2012). Lyn Hejinian's poem sequence *The Cell* has been recognised as a 'a series of meditations on the embodied self,' as well as appropriation of scientific descriptions of matter. Holmes. p.95 Miroslav Holub in his poem ''Hemophilia / Los Angeles,' uses the features of one system, cell biology—to reconsider another, the freeway system. Holub, M., et al. (1990). Vanishing lung syndrome, Oberlin College Press.

[540] Francis Crick, *The Astonishing Hypothesis: The Scientific Search for the Soul*, (New York: Simon and Schulster Inc, 1994), p. 3.

[541] Alexander Johnson Bruce Alberts, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, Peter Walter, *Molecular Biology of the Cell, Sixth Edition*, (New York: Taylor & Francis Group, 2014), p. 10.

mate, cells make identical copies of themselves and, as Armantrout says, they become 'like-minded' as 'every living cell [is] fundamentally similar'[542]—individuals in a 'consensus' share general agreement on information. In terms of cell biology, and the terminology which follows, leaves little doubt that this is how Armantrout wished us to consider her ideas; information is initially shared via separated DNA strands which act as a 'template … with a complementary sequence'.[543] With its proximity to 'consensus', the word 'quorum' transmits non-scientific understandings of the word outside science: the requirement of a quorum is to act as 'protection against totally unrepresentative action in the name of the body by an unduly small number of persons'.[544] If scientific uses of the word are integrated, the behaviour of cells can be considered in light of the behaviour of individuals; 'quorum sensing bacteria produce and release chemical signal molecules'[545] and this is a primary method of chemical communication between bacteria which are largely 'single cells'. Quorum sensing allows bacteria to coordinate their behaviour and controls the processes of virulence and bioluminescence. Melissa Miller and Bonnie Bassler state that 'the most intensely studied quorum sensing system is that of the bioluminescent marine bacterium',[546] thus making it unlikely that Armantrout's inclusion of the word 'bioluminescence' is coincidental.

A tone of warning exists in the same lines 'quorum/ bioluminescence and virulence', 'feelings' that the cells/individuals 'share'. This warning comes in the dual ability of bacteria, or individuals, to protect or damage, to create light as well as extinguish it. 'Virulence', in science, refers to the capacity bacteria has to 'cause disease … and subvert the machinery of the host cell';[547]this occurs when the bacteria are pathogenic to humans and creates virulence factors that influence its behaviour, particularly in terms of replication. Bioluminescence is produced by bacterium for a variety of different reasons: light source, mimicry, communication, reproduction, and 'warding off predators and attracting prey'.[548] It is reasonable to suggest that the power of cells and individuals to affect the course of another's life was forefront in Armantrout's life at this point. She writes that she took notes on the poems in this section whilst in hospital, where she underwent an unconventional regime of

[542] Bruce Alberts, p. 10.
[543] Bruce Alberts, p. 10.
[544] Daniel H. Honemann Henry M. III Robert, Thomas J. Balch and Shmuel Gerber Daniel E. Seabold, *Robert's Rules of Order Newly Revised, 11th Edition*, (Boston: Da Capo Press, 2011), p. 21.
[545] Melissa B. Miller, Bonnie L. Bassler, 'Quorum Sensing in Bacteria', *Annu Rev Microbiol*, 55 (2001), 165–99, (p. 166).
[546] Bassler, p. 167.
[547] Bruce Alberts, p. 1275.
[548] Bassler, p. 167.

treatment for her cancer, and that ‘at the time, certainly wasn’t convinced [she would] survive’, living ‘life one scan at a time’.[549] By this point, Armantrout has drawn inference to ‘single cells’ whose actions of ‘bioluminescence and virulence’ make them likely to be bacterium, as akin to individuals in a group, drawing attention to the dual ability to harm and enrich each other along with their host. These suggestions may be influenced by the vulnerability Armantrout felt ‘as she struggled to come to terms with her own mortality’;[550] she writes that she ‘started reading about cancer and what [she] learned was interesting’.[551] In an effort to understand her situation Armantrout turns to what appears to be, for her, the largely foreign language of science to help bridge the gaps between her conceptualisation of language and experience. Her use of non-scientific and scientific association means that her poetry enacts the same process as conceptual metaphor—one thing is considered in light of another.

As the poem progresses the link between individuals as cells and cells as individuals becomes more explicit; an interpretation informed by the conceptual network theory may suggest that one input space is structured by cells which communicate via the predefined characteristics of quorum sensing, and the second input space by individuals communicating in a quorum to reach agreement via predetermined legislation. The main integration features that structure the new blended space relate to communication and similarity, which are strengthened when Armantrout tells us that cells ‘share’ a condition; she continues that ‘with effort’ humans can come close to ‘this condition’. According to optimality pressures, these lines deviate from the rest of the poem because Armantrout disconnects the web connections she has made by stating ‘humans’ disrupt the web principle. This is because the reader, according to the optimality principle of good reason, has already integrated scientific and non-scientific understandings of the vocabulary to avoid the ambiguity and the juxtapositions which has been created between scientific language and non-scientific. This causes a distancing, or v*erfremdungseffek*,[552] which forces us to ask *what* condition is shared; given the information, the conclusion is likely to relate to the personified condition of cells in a ‘quorum’. In this quorum an agreement is made between like-minded individuals making decisions based on predetermined rules because they ‘direct activities that are beneficial when performed by

[549] Anti Cancer Club, 'Rae Armantrout Versed', 2017. 11.02.17 (2016), <https://anticancerclub.com/inspiring-stories-from-cancer-survivors/rae-armantrout-versed/> [accessed 12 January 2017].
[550] Club.
[551] Anti Cancer Club, ‘Rae Armantrout Versed’, (Reno: AntiCancer Club, 2016).
[552] See Chapter 2, p. 42.

groups acting in synchrony'.[553] The next lines indicate that 'approach[ing]/ this condition' is desirable and simultaneously introduces Armantrout's trademark inclusion of found language, though the 'informant' is as likely to be imagined as they are real. This found language connects us to cells, marine bacteria, and humans with the direct speech of "synchronised swimming" and its association to water, life, and humans.

One of the main associations that comes from this phrase is that of similarity, which represents the topological frame introduced with 'like-minded' and carried to this point through the words 'consensus', 'two ways', and 'share'. If scientific and non-scientific ideas continue to merge, 'synchronised swimming' may well refer to mitosis as the phrase 'synchronised swimming' has been used as a metaphor to explain mitosis:[554] a process of cell division during which 'the sister chromatid are separated and distributed … to a pair of identical daughter nuclei',[555] that is, mitosis creates two new cells which are identical to each other as well as the parent cell. If Armantrout is using this phrase to refer to mitosis, a reasonable suggestion considering the scientific references along with the carefully chosen 'informant' which makes associations to criminal activity and information sharing for personal gain,[556] a sardonic message relating to cancer can be observed. In the creation of a malignant or 'cancerous' tumour the checkpoints in the cell cycle are defective, meaning that information cannot be accurately shared or regulated;[557] cancer is effectively an uncontrolled mitosis. The 'informant' does not suffer this problem because their 'synchronised swimming' or successful mitosis has enabled them to have 'a wonderful life', something Armantrout 'too would like', but she has not been able to 'exert' the same 'power over time'.

The final lines play with ideas of time which, as Armantrout notes, 'becomes more pressing and charged when we feel we are under a death sentence'.[558] We are given her literal desire to 'pass' more time through cancer scans and treatment 'aggressively, dramatically', before

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[553] Steven T. Rutherford and Bonnie L. Bassler, 'Bacterial Quorum Sensing: Its Role in Virulence and Possibilities for Its Control', *Cold Spring Harbor Perspectives in Medicine*, 2. 11 (2012), p. 1.
[554] *Lewis' research found that in 2006 Graduate students noted the similarity between synchronised swimming and mitosis, a metaphor that has been used in the explanation of the process with increasing frequency since* - Sharon Walpole William E. Lewis, Michael C. McKenna, *Cracking the Common Core: Choosing and Using Texts in Grades 6-12*, (New York: Guilford Publications, 2014), p. 211.
[555] Bruce Alberts, p. 978.
[556] Teresa Nemitz Roger Billingsley, Philip Bean, *Informers: Policing, Policy, Practice*, (New York: Taylor & Francis, 2013), pp. 1–12.
[557] T.D. Pollard, W.C. Earnshaw, and J. Lippincott-Schwartz, *Cell Biology*, (Philadelphia: Elsevier Health Sciences, 2007), pp. 783–785.
[558]Anti-Cancer Club.

eventually having time and perspective 'gets lost' and importantly, health, with the words 'rosy glow'. Literal interpretation though becomes complicated with Hegelian echoes in the text with the words 'exert power over time', which can be found verbatim in translations of *The Encyclopaedia of the Philosophical Sciences.*[559] It seems logical that when, as Armantrout says, time is more 'pressing', there should be a better way in which to move through it or 'pass' it. In the *Encyclopaedia* Hegel writes on time:

> The concept, however, in its freely existing identity with itself, is in and for itself the absolute negativity and freedom. Therefore, time does not exert power over it, and it is neither within time nor something temporal. It is, to the contrary, rather the *concept* that exerts power over time, which is the negativity merely as externality.[560]

To summarise Hegel, consciousness is time; in some sense time has always passed away yet has still marked the self-consciousness. Georg Wilhelm Friedrich Hegel argues that although 'time is called omnipotent, it is also completely impotent … because all finite things are temporal, because sooner or later they are subject to change, their duration is thus only relative'.[561] The idea of spirit being somehow able to 'forget all about' time may be comforting to Armantrout who develops, following an analysis of 'A Resemblance',[562] ideas of consciousness as akin to the soul; the soul being made up of particles of matter, which contain particles of subjective experience as achieved through lived experiences. Even 'the meaning of the word/ "pass"" is temporal—as Martin Heidegger argued: 'Hegel's explication on the genuine concept of Being…, is nothing less than a farewell to time on the road to spirit, which is eternal'.[563] A shift away from materialistic explorations of the soul and consciousness, seen in 'A Resemblance', can be observed along with a marked increase in engagement with scientific visions and metaphors.

An increased use of scientific vision continues in the volumes following *Versed* as Armantrout turns further toward the discourse of science to bridge gaps and create them. In

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[559] Ernst Behler, *Encyclopedia of the Philosophical Sciences in Outline and Critical Writings: G.W.F. Hegel*, (London: Bloomsbury Academic, 1991).
[560] Karin de Boer, *On Hegel: The Sway of the Negative*, (Basingstoke: Palgrave Macmillan UK, 2010), p. 125.
[561] Arnold V. Miller Georg Wilhelm Friedrich Hegel, *Hegel's Philosophy of Nature: Being Part Two of the Encyclopaedia of the Philosophical Sciences (1830)*, (Oxford: Clarendon Press, 1970), pt. 2. p. 36.
[562] See p. 29.
[563] Malabou, p. 4.

Versed, her engagement with science is conducted with an urgency potentially produced by her cancer diagnosis and, throughout the volume, Armantrout uses her poems to test her own and others' hypotheses on self and collective along with the other philosophical dilemmas that leave her 'puzzled'. The associations that this experiment creates becomes the background for a reformed question or new hypothesis to test again. Armantrout is aware from the outset that this is what she is doing. She writes in 'Results': 'Votes are registered / at the server / and sent back / as results'. As we move through the poetry, largely chronologically, a position we are able to take as Armantrout writes that this is how she often collates her books,[564] readers see that the 'results' the poetry gives never completely align with the hypothesis, which means that the question has to be continually reformed. The difficulty with Armantrout's method in *Versed* is that despite achieving her aim of discovering new meanings, which happens through a conceptual integration of blended input spaces, the conflict between Language and lyric does not completely find balance. This is partially because, as Dan Chiasson notes, 'she takes the basic premises of Language writing somewhere they were never intended to go: toward the mapping of a single individual's extraordinary mind and uniquely broken heart'.[565] In this way, her Language informed poetic style preserves her unique formation of the lyric "I", but this is paradoxically a formation which she conceals from readers in order that they may create their own, rather than a second-hand empathy with hers.

Armantrout uses scientific vision as both a protective and creative force in her poetry; she wants readers to take the poem, as she writes in 'Passage', as a 'frame' for 'a cargo cult runway, / forever inviting / the future to appear'.[566] She is proposing that readers should continually invite the possibility of answering questions, whilst accepting the reality that this outcome will never actually materialise. Having cemented this position, readers are left on the final page of *Versed* with an invitation to continue to the next cycle of question and revision:

> Each material
> fact
> is a pose,

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[564] This is also accurate in the case of *Versed,* which consists of two manuscripts written pre, during, and post cancer diagnosis, as Armantrout says this worked almost as 'as prequel and sequel'. This chronological ordering continues: 'The poems I wrote next, for what turned out to be *Money Shot,* had a different feel and a different focus of concern. See: Wesleyan. 'A Conversation with Rae Armantrout'.
[565] Chiasson.
[566] Armantrout, 'Passage', in *Versed,* p. 119.

an answer waiting to be chosen.
"Just so," it says.

"Ask again!"[567]

Versed marks a maturing of Armantrout's poetic method, a culmination of the lyric, Language, and scientific elements at work in her poetry. Armantrout has located the lyric "I", which she writes 'exi[sts] finally / as the idea / of temporal extension' and recognises the difficulties of consciousness it must be associated with: 'I knew when I was / where – or where I was / when'.[568] In order for Armantrout to continue her poetic inquiry, in line with the aims of her new method, she must re-examine past questions by taking a Kantian[569] approach to *her* Lyric "I", which in Armantrout's poetry equates to the concept of self by grounding it in experience.

The poetry in *Versed* reveals again the deceptive nature of language; as Armantrout investigates in 'A Resemblance', a word is always at least two things: its arbitrary meaning and its connotation. The first half of *Versed* appears to attempt an escape from language, but inevitably it expects failure. Armantrout's poetry uses metaphor differently stretching it to push at the confines of time, which as shown with allusions to Eliot is destructive to language, which has to exist in time. These conflicts in time are what mark her distinctive and undeniably Language-influenced poetics with moments of raw lyricism; but Silliman's arguments are confirmed—her poetics is neither Language nor lyric and this provides one reason why a new cognitive approach is essential to successful interpretation of her poetry. Armantrout's unusual use of metaphor creates input spaces that reach across stanzas and groups of poems, a process that is often represented by the physical structuring of Armantrout's sectional poems. In *Versed,* Armantrout's method progresses from earlier poetry by using the unique network she creates with meaning to her advantage. Drawing the reader's attention to previous instances and references, and then asking them to connect the

[567] Armantrout, 'Fact', in *Versed*, p. 121.
[568] 'Passage', p. 119.
[569] Kant creates a unity in problems of consciousness by unifying our perception of experience 'In the visual case, momentary episodes of visual experiencing are accompanied by representations of recently experienced visual contents. More generally, these representations (or retentions) allow us to be aware that our presently occurring experience is a part of an ongoing process.' See: Barry Dainton, 'Temporal Consciousness', *The Stanford Encyclopedia of Philosophy*, Fall 2017 (2017), <https://plato.stanford.edu/archives/fall2017/entries/consciousness-temporal/ > [accessed 8 June 2018].

dots reveals poetry, which requires meaning to be created bilaterally between poet and reader.

Readers have to engage imagination to compress Armantrout's input spaces, which are often separated by long distances of time, into new blended spaces. Fauconnier and Turner's theory offers a developed system for dealing with these problems and demonstrates how interpretations can be managed across complex poems that defy linear narrative and logical conclusions. *Versed* uses allusion, scientific and poetic vision to borrow language and meaning; at times they work together to suggest possible progression and at others they are set against one another which creates distance from meaning and concepts. Without a new cognitive approach, readers are abandoned in Armantrout's continual repetition without resolution, an action clear in many of *Versed*'s poems. Fauconnier and Turner's theory cannot account for all the action in Armantrout's poetry because, having created what they term 'a web', Armantrout breaks these connections, disrupting the normal processing of meaning and associations. Their method can be used to inform other cognitive approaches that consider her use of metaphor which, it will be argued, becomes hyper-extended in order to reform questions and targets rather than to resolve. The following chapter will investigate Armantrout's hyper-extended metaphors and how a new cognitive approach might be applied to the poetry in two subsequent volumes, *Money Shot* and *Just Saying.* It will analyse how Armantrout uses a new solidified method to create networks of metaphor, as she revisits past questions in light of new experiences and information.

Chapter Four:
Towards a New Cognitive Method

1
Our first gods
were cartoon characters—

quirks and *quarks*
each dead
wrong,

and immortal.

2
Silence is death
and
silence is dead-air.

Give a meme
a hair-do.

Give it a split screen.

Make it ask itself
the wrong question.

Make it eat questions
and grow long.

'The Air'[570]

'The Air' appears in the early pages of *Money Shot* offering an example of the new focus Armantrout gives long-standing ideas and metaphors in her poetry; this includes ideas of simultaneity, self-scrutiny, exposure, concealment, and knowledge flow. Despite their earlier instances, this book links such themes more closely with attention than their previous appearances making it necessary for Armantrout to revisit past questions. Stanley Fish has observed 'it is not that the presence of poetic qualities compels a certain kind of attention, but that the paying of a certain kind of attention results in the emergence of poetic qualities';[571] these are qualities which Armantrout has previously defined as the gap between 'what is seen

[570] Rae Armantrout, 'The Air', in *Money Shot*, (Connecticut: Wesleyan University Press, 2011), p. 13.
[571] Jackson and Prins, p. 79.

and what is seeing, what can be known and what it is to know'.[572] Fish continues that certain types of attention can cause a 'willingness … even say a determination—to see connections',[573] and this is precisely what Armantrout's renewed focus on the everyday attempts to understand; what connections can be made by paying attention to its seemingly unrelated moments. This focus in her poetry is recognised by Andrew Epstein and drawing on the work of Laurie Langbauer he notes that 'for some theorists and writers "attention to the everyday … becomes a form of cultural revolution"'.[574] While Stephanie Burt has argued her poetry remained an 'expression of temperament',[575] Armantrout is clear that attention to the supposedly banal realities of the everyday, or as she calls them 'interventions of capitalism into consciousness',[576] is an important component of her particular 'poetry of witness'[577] and in *Money Shot* they help to cement the revolutionary position her poetry takes. Armantrout writes in another poem from *Money Shot,* 'Human',[578] that the 'Hopeless persistence' of calling things to attention can be blamed on 'petulance', or bad temper, rather than being recognised as a vital consideration of the 'human' condition.

By the time of *Money Shot's* writing, the condition of 'capitalist interventions' into societal consciousness had undergone radical changes—because of scientific developments, the ever-increasing ubiquity of the Internet, and the economic disaster—which occurred during the book's composition. These interventions often arise in the form of evolving and perilous memes that impact consciousness and metaphor. In the early twentieth century, the Whorfian hypothesis was initiated by Edward Sapir's argument that 'we see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation',[579] and while linguists have contested the more radical deterministic elements of this argument, Daniel Chandler argues that many linguistics now accept a softer account of Sapir's initial hypothesis: 'namely that the ways in which we see the world may be *influenced* by the kind of language we use'.[580] This remains a reciprocal relationship in which, as previously argued, the language we use is similarly influenced by

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[572] Armantrout and Press, p. 55.
[573] Jackson and Prins, p. 79.
[574] Andrew Epstein, *Attention Equals Life: The Pursuit of the Everyday in Contemporary Poetry and Culture*, (Oxford: Oxford University Press, 2016), p. 69.
[575] Burt.
[576] Armantrout and Press, p. 120.
[577] Armantrout and Press, p. 120.
[578] Armantrout, 'Human', in *Money Shot,* pp. 39–40.
[579] Abram, p. 91.
[580] Daniel Chandler, 'The Sapir-Whorf Hypothesis', (1994), <http://visual-memory.co.uk/daniel/Documents/short/whorf.html> [accessed 6 June 2018].

our embodied experience in the world in which we live. Susan Blackmore argues that the environments in which our experiences take place has been influenced by the appearance of memes, continuing that 'human language capacity has been meme-driven and that the function of language is to spread memes'.[581] The evolution of memes remains dependent on human interaction and attention, complicating and endangering understanding. Armantrout's unusual recycling of ideas and symbols subjects the memes and metaphors to a process of conceptual reassignment and selection. I will argue that by reading Armantrout's allusive use of the media, Internet, found language, and pop culture references within her work as memes, gives readers a way to navigate the conflict and questions raised by such inclusions, helping us consider the propositions that these packets of information make for how we should understand attention and consciousness.

In 'The Air', the line 'silence is death/ and/ silence is dead air' introduces ideas around the duality of attention and demonstrates *Money Shot's* interest in interrogating a changed cultural consciousness, a shift that partially came about due to deception and inattention. This poem develops previous ideas relating to the necessity of conflict for creativity, particularly important when, as Gillian Beer notes, combining diverse 'forms of knowledge'.[582] Earlier instances, such as Armantrout's use of the Garden of Eden metaphor, observes that the absence of conflict is akin to 'creative death'.[583] However, in 'The Air', the absence of conflict that is 'silence' also becomes 'dead-air', which now in the context of the confusing and Internet driven cultural flow becomes a potentially desirable environment, although with Armantrout's careful placing of 'and' we come to view 'silence' as two opposing concepts.

As with the concept of 'silence', graphological positioning, repetition, and near-rhyme are used to create coherence between sizeable and diverse subjects, such as science, poetry, religion, and the Internet, which despite resisting accord can be loosely connected by Armantrout's technique and the poem's gathering repetitive rhythm. 'The Air' provides a visual and conceptual glimpse into the emphasis Armantrout makes on the importance of acknowledging the simultaneity of different truth claims, an important recognition for Armantrout as she feels that this is the manner in which information comes to us through our lived experiences. This is not the first time Armantrout has warned against subscribing to the

[581] Susan Blackmore, *The Meme Machine*, (New York: OUP Oxford, 2000), p. 93.
[582] Gillian Beer, *Forging the Missing Link: Interdisciplinary Stories*, (Cambridge: Cambridge University Press, 1992), p. 5.
[583] See Chapter 2, p. 52.

specific authority claims offered by any one type of explanation, but this section creates metaphorical closure on all that has gone before so that she can develop a new understanding—each explanation is concurrently 'dead' and 'immortal'.

'The Air' presents scientific 'quarks' and non-scientific discourse 'quirks' as unrealistic and inaccurate deities—they are 'cartoon characters' 'each dead/wrong'. The combination of the possessive pronoun and ordinal adjective takes ownership of these origins, casting doubt on the validity of each of these 'gods' with the suggestion of plurality that questions the typical notion of a singular focus for faith. The introduction presents readers with Armantrout's own self-scrutiny because she is included in the observation with the use of 'our', again questioning her own origin myths. The concept of deity as unrealistic or a 'cartoon character' is an expansive symbol in *Money Shot,* having appeared previously in *Versed* in the poem 'Operations'.[584] In 'Operations', Armantrout uses an 'avatar' as a metaphor for a player's character in a video game and 'the embodiment and representative of a god'.[585] The reprocessing of the avatar metaphor expresses a Sapir-Whorfian[586] approach, which Chandler notes is a position that Fish also occupied because of his argument that 'it is impossible to mean the same thing in two (or more) different ways'.[587] Chandler continues that 're*form*ulating something trans*forms* the ways in which meanings may be made'.[588] Ideas of repetition and 'reformulation' contribute to the argument that Armantrout's repetitive and consistent use of language and metaphor results in an evolving vocabulary of memes, which are imbued with meaning via repetition and reassignment.

'The Air' widens the entire concept of deity, and the inclusion of 'our first gods', and is able to activate previous associations relating to the mythological role that scientific and religious discourses have played in her poetry thus far; yet, at this point, both discourses represent a powerful and transferrable influence in an individual and wider cultural consciousness. These ideas are closely followed by the introduction of 'memes' in the second section and suggest that not only do the ideas of science and religion represent potentially dangerous

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[584] Armantrout, 'Operations', in *Versed,* p. 15.
[585] Deborah Escalante.
[586] Sapir-Whorf Hypothesis: Sapir and Whorf posited that the particular language we speak influences the way we see reality because categories and distinctions encoded in one language are not always available in another language (Linguistic relativity.) Scholars also interpret the hypothesis as standing for the proposition that differences in the structure of languages produce differences in how people think (Linguistic determinism). H. James Birx, *Encyclopedia of Anthropology,* (London: SAGE Publications, 2005), p. 2051.
[587] Chandler.
[588] Chandler.

memes, but that Armantrout is re-evaluating her previous ideas in light of the continued and increasingly significant influence of the Internet on the flow of cultural information and knowledge. This poem predicts a more openly sceptical view of *both* religious and scientific discourses predominantly because their language and metaphors are heavily culturally constructed. Armantrout's use of 'meme' concurs with Richard Dawkins' significant contribution to our understanding and labelling of memes where he wrote: 'god exists, if only in the form of a meme with high survival value, or infective power, in the environment provided by human culture'.[589] Memes, by Armantrout's appropriation, are replicated through imitation; they are repeated and undergo rigorous testing by distortion with 'hair-do[s]', they are broken down by 'split-screen' and asked the 'wrong question[s]' until they extend and 'grow long', a process that mimics an online orgy of knowledge lacking consciousness. Memes are as ubiquitous as metaphor and inhabit every aspect of our experiences; they continuously 'evolv[e] for their own sake not for the sake of individual humans or their genes',[590] and the rise of the Internet with its rapid transfer of information has made their spread and replication more profuse.

Up to and including *Versed,* Armantrout's poetry has established a complex relationship with metaphor remaining suspicious of its deception, while concurrently welcoming its 'slippery slope'[591] as an aid to the creativity needed to create what Lyn Hejinian coined a 'Poetics of Inquiry'. Armantrout's poetry regularly displays an 'alertness to and critique of [language's] misuse' adopting the expected avant-garde approach to 'the political and ethical dimensions of language'.[592] The two volumes subsequent to *Versed, Money Shot,* and *Just Saying,* which are to be discussed in this chapter, gradually slow what Armantrout calls the 'carousel'[593] of meaning, creation, and destruction, which she subjected readers to in her earlier poetry. In these volumes, metaphors must be hyper-extended in an attempt to reveal some of the correspondences and knowledge they hide and distort. This reduction of speed comes partly from a gentler use of juxtaposition, selective repetition, and subtle variation, which creates distance within her metaphors. Armantrout again attempts to go beneath the 'crust'[594] of

[589] Richard Dawkins, *The Selfish Gene*, (Oxford: Oxford University Press, 1989), p. 193.
[590] Robert Arp, Francisco J. Ayala, *Contemporary Debates in Philosophy of Biology*, (Oxford: Wiley, 2009), p. 256.
[591] E Volokh, (2003), "The Mechanisms of the Slippery Slope" (PDF). *Harvard Law Review* (Harvard Law Review, Vol. 116, No. 4).
[592] Hejinian, p. 32.
[593] Rae Armantrout, 'Near Rhyme', in *The Pretext*, (California: Green Integer, 2001), p. 41.
[594] Armantrout, 'Versed', in *Versed*, p. 5.

metaphor as she opens them out to reveal correspondences which she continually re-examines—at times engaging with them, reassigning them, and at others, cancelling them out. In this way, our own attention to our lived experience and understanding of the world is revised.

In *Money Shot* and *Just Saying* attention is considered in light of individual lived experiences and shared cultural experiences mixing an avant-garde deconstruction of language with an appeal to the importance of paying attention to what, on first appearance, seems to be the banalities of daily existence. Armantrout's new focus on attention was foreshadowed by her poem of the same name[595] which, although concerned predominantly detached voices, touches on the influence of culture on the formation of different voices. Armantrout's interest in attention in *Money Shot* reflects, as William Montgomery notes, 'a refusal of the culture of the quick payoff',[596] a culture that has been complicated and propelled by the Internet—a major influence on the rapid and symbiotic flow of information between science, poetry, and wider society in general. The influence of the Internet drives George Lewis Levine's hypothesis against the arguments of F.R. Leavis and C.P. Snow, that science and literature find themselves within one culture. He writes that the truth claims of science and poetry reside within one culture 'in two senses: first, in that what happens in science matters inevitably to what happens everywhere else, literature included; and second, that it is possible and fruitful to understand how literature and science are mutually shaped by their participation in the culture at large'.[597] Levine continues that 'science and literature are two alternative, but related expressions of a culture's values, assumptions, and intellectual frameworks'.[598] Our 'culture at large' is now inextricably communicated within itself by the Internet, an argument that must find support with scholars, such as Beer, who continue Levine's view that all members of a society 'have access to the shared metaphors and arguments of the time, and think with them; they too are walkers, parents, film-goers, and so on. That is, ordinary adult life provides—indeed enforces—the need for us all to work with a

[595] See Chapter 2, p. 55.
[596] Montgomery.
[597] Alan Rauch George Lewis Levine, *One Culture: Essays in Science and Literature,* (Wisconsin: University of Wisconsin Press, 1987), pp. 5–6.
[598] George Lewis Levine, p. vii.

variety of kinds of knowledge';[599] it follows that different types of knowledge are now communicated by and within our Internet society.

Armantrout grew up in a pre-Internet world, yet has lived through a time in which 'the local was becoming global and vice versa',[600] until finally she, as most individuals, resides largely within the Internet and has become represented online by specific communities of knowledge. Charles Bernstein argues that Armantrout's inclusion of Internet references occur partially because of her 'will to impersonality [which] involves recycling material from found sources and the detritus of popular culture and Internet spam',[601] though this is sporadically evident in her work, particularly in *Versed. Money Shot* represents an evolution towards a more cautionary awareness of the new selves partially constructed in the Internet culture of the United States. The implicit and sometimes explicit references to the Internet in *Money Shot* and *Just Saying* go much further than Bernstein's notion of popular culture being represented through recycled material, inclining instead to Ethan Zuckerman's idea of 'imaginary cosmopolitanism'.[602] This idea maintains that the experience of the Internet and social media gives a misleading picture of global connection, when on further investigation our attention is focused on far smaller relationships and connections. Zuckerman argues that 'information may flow globally, but our attention tends to be highly local and highly tribal',[603] and he writes 'our challenge is not access to information; it is the challenge of paying attention'.[604] In her inclusion of digital references, Armantrout subtly comments that the excess of readily available information and its promise of knowledge is deceptive. The interaction with this vast amount of information results in the collection of memes, which adapt via human interaction in a like manner to Armantrout's hyper-extended metaphors. The poetry in *Money Shot* and *Just Saying* subscribes to arguments, such as those of Patricia Fara's, which note that 'the need to tap in electrically has widened rather than narrowed

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[599] Beer, G: Speech on the Challenges of Interdisciplinarity http://www.dur.ac.uk/ias/news/annual_research_dinner/ [accessed 16 August 2017].
[600] Natalia Carbajosa, 'Extremes of the Avant-Garde: H.D. And Rae Armantrout', *Caliban: French Journal of English Studies,* 35. 2014 (2014), 85–100 (p. 2).
[601] Charles Bernstein, 'Tls on Susan Howe and Rae Armantrout', *Jacket 2* (2011), <http://jacket2.org/commentary/tls-susan-howe-and-rae-armantrout> [accessed 20 August 2015].
[602] Daniel Chandler and Rod Munday, 'Imaginary Cosmopolitanism. In a Dictionary of Social Media ', (2016), <http://www.oxfordreference.com/view/10.1093/acref/9780191803093.001.0001/acref-9780191803093-e-613> [accessed 20 June 2018].
[603] Ethan Zuckerman, *Digital Cosmopolitans: Why We Think the Internet Connects Us, Why It Doesn't, and How to Rewire It,* (New York: W. W. Norton, 2013), p. 58.
[604] Zuckerman, p. 19.

gulfs'.[605] Armantrout notes that the repetition of memes makes them untrustworthy as they 'grow long' with unanswered questions.

In *Money Shot* and *Just Saying* Armantrout explores the connections shared by the digital flow of information, the circulation of money, attention, self-scrutiny, and the transfer of language and information between science and culture. These volumes complicate the poetic work carried out previously in relation to origins, questioning everything determined so far about her personal origins, origin myths, and the Internet. This ouroboric questioning leaves readers searching for 'an adhesive [to] hold the pieces together';[606] yet, this 'adhesive' is obfuscated beyond individual poems and can only be found by reaching across several volumes of poetry, which often refuse to be contained even by their own aims, but which provide opportunities to examine Armantrout's particular manipulation of metaphor. *Money Shot* is one such example which ends by returning us to its origins in the final poem, 'Real Article', with the lines: 'everything I know / is something I've already repeated'.[607] The difficulty for readers is that Armantrout doesn't allow unobstructed meaning to be created from anything she 'repeats', but instead places readers inside her hyper-extended metaphors, which, as shown in Chapter Three, are multiple origin devices that force 'one thing [to] swallow another[608] and create an 'endlessly renewing loop'.[609]

*Money Shot'*s concern with concealment and exposure confounds a reader's understanding of the poetry further, and at this point they come to realise, along with Armantrout, that the creation of an infinitely renewing loop of ideas and meaning is no longer one of the main objectives. The earlier cycle of meaning, creation, and destruction becomes a cycle of creation and reassignment, after all 'everything [she] know[s] / is something [she's already] repeated',[610] but in *Money Shot* and *Just Saying* the cycle itself is cross-examined, having been driven by a sinister flow of cultural information that makes self-knowledge on an individual and collective basis distorted.

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[605] Fara, p. 402.
[606] Deborah Escalante.
[607] Armantrout, 'Real Article', in *Money Shot*, p. 77.
[608] Armantrout and Press, p. 105.
[609] See Chapter 2, p. 70.
[610] Armantrout, 'Real Article', in *Money Shot*, p. 77.

4.1 Attention, Memes, and Metaphor in Money Shot

Money Shot was written, according to Armantrout, '[between] 2008 and 2009 when the devastation caused by speculation and the essential insolvency of the system were being revealed after being hidden for who knows how long'.[611] The wider context goes some way to explaining Armantrout's renewed interest in concealment and exposure, which parallels the different types of overt and covert attention that are explored in *Money Shot.* However, it would be incorrect to assume, as William Montgomery notes, that 'Armantrout has somehow in her late career become a writer of Big Themes'.[612] He posits that Armantrout's main concerns are around 'the fragile fences between private and public selves, the private body and the body politic, [and how these] are increasingly eroded by our online "presence"';[613] an interest that seemed to form after Armantrout's experiences on acid in the sixties, which she felt revealed to her that the self was in fact a 'pastiche of imitations and reaction formations' or 'defensive barricades', which she had previously blamed on media influences such as 'Billy the Kid'.[614] These concerns evidently cause Armantrout apprehension, particularly as Montgomery's use of the body politic metaphor suggests, in regard to the idea of a collective consciousness; but Montgomery's argument, that Armantrout's intense self-scrutiny 'seems to foreclose any possibility of forward "passage"',[615] fails to recognise that the reason for this repeated scrutiny is related to attention and to memes. How we pay attention to the world and to ourselves is affected, often unconsciously, by 'memes fighting it out to grab the information-processing resources of the brain they might use for their propagation'[616] and therefore 'forward passage' must be made by incremental steps and minor adjustments. This incremental progression is related to memes in a process parallel to Dawkins' description of 'the basic principle of Darwinian evolution, when information is copied again and again with variations and with a selection of some variants over others, you must get evolution'.[617] Dawkins argued that any information could be copied and replicated to produce 'design out

[611] Deborah Escalante.
[612] Montgomery.
[613] Montgomery.
[614] Armantrout and Press, p. 161.
[615] Montgomery.
[616] Blackmore, p. 243.
[617] Susan Blackmore and others, 'The Power of Memes', *Scientific American,* 283. 4 (2000), 64–73, (p. 67).

of chaos',[618] and this idea led to his coining of memes which, although he later distanced himself from, 'laid the foundations for understanding the evolutions of memes'.[619]

Armantrout's repetition and variation acts as a filter for conceptual correspondences, which scholars, such as Mehdi Ordikhani-Seyedlar, argue is key to 'revea[ling] the ability of attention (as the mind filter) on how the external stimuli are encoded in the brain'.[620] These considerations are important when attempting to understand Armantrout's preoccupation with what Montgomery calls 'virtuality' and more particularly with memes. Chris Abel uses Dawkins' arguments to assert that 'memes should be regarded as a unit of information residing in the brain'.[621] Daniel Dennett also acknowledges this, observing that their transmission through physical mediums such as 'cinematic treatments, plays, and operas based on novels and even video games can count as meme replications'.[622] Armantrout's poetry attempts to unravel the impact that these 'external stimuli' have on our understanding of our own consciousness, introducing a *re*-turning to what Jahan Ramazani describes as a 'quintessentially "lyric" moment of emerging self-consciousness' and a reengagement with the more lyrical elements of her poetic style.

Armantrout's poetry has previously resisted lyric's 'self-absorption, its withdrawal into itself, [and] its detachment from the social surface, [which] is socially motivated behind the author's back', [623] making it important to observe the reasons for her renewed lyricism in *Money Shot.* It does not follow that Armantrout is newly aware of this motivation but rather that her lyrical moments suggest self-awareness does move inwards, and that as it does it takes along with it an awareness of the external and socially motivated lyric moment—a meme for the social and historical moment in which the poem is situated. In this way, self-consciousness does not represent a withdrawal from society, but an awareness and attention to it that leads to a filtering of memes that constantly quarrel for attention. These nascent ideas are evident in the poem 'Duration':

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[618] Blackmore and others
[619] Blackmore, p. 6.
[620] Mehdi Ordikhani-Seyedlar and others, *Ssvep-Modulation by Covert and Overt Attention: Novel Features for Bci in Attention Neuro-Rehabilitation,* (2014), p. 5465.
[621] Chris. Abel, *The Extended Self: Architecture, Memes and Minds,* (Manchester: Manchester University Press, 2016), p. 281.
[622] Daniel C. Dennett, *From Bacteria to Bach and Back: The Evolution of Minds,* (London: Penguin Books Limited, 2017), p. clii.
[623] Jackson and Prins, p. 343.

Those flurries
of small pecks

my mother called
leaky faucet kisses.

Late sun winks
from a power line

beyond the neighbour's tree.
In heaven,

where repetition's
not boring—

Silver whistles
of blackbirds

needle
the daylong day.

We're still
on the air,

still on the air,
they say

'Duration' marks a pivotal moment in *Money Shot*, a point at which Armantrout's poetic ideas are pulled in different directions by different types of silence and attention, with concepts that are affected by our own 'noise' and the 'noise' of the media driven society in which we live. It provides another example of how Armantrout reprocesses previously used symbols and metaphors from earlier poems and volumes, which forces a peculiar dilation of concepts. Firstly, it is important to identify the different considerations of silence and attention in 'Duration'. As partially indicated by Montgomery's assertion, 'Duration' makes 'allusion to John Cage's maxim on boredom' by making our heaven 'a hell of eternal return',[624] yet Montgomery misses some of the crucial substance of Cage's work in this

[624] Montgomery.

acknowledgement. Armantrout's allusion articulates far more than the idea of repetition as a tedious type of creativity borne from torturous replication, which Montgomery offers as to the core of Cage's work. In fact, as Armantrout's allusion to Cage is combined with her metonymic bird 'pecks' or calls 'still on the air', it is likely that she is also alluding to moments of self-consciousness, particularly those which occur in 'silent' moments or suspended time, such as those in the poetry of either T.S. Eliot or Edward Thomas.

In the poetry of Thomas, blackbirds represent a certain type of silence; not one that is understood only as the absence of noise but the absence of directed noise, which is the ambient noises that we hear when our own voices, or those of others that may be directed towards us, are 'still on the air'. This particular type of silence is one that Cage was inspired to explore because of his interest in Eastern and Zen thought, which led him to take up the idea that the true purpose of music 'was to sober and quiet the mind, thus rendering it susceptible to divine influences',[625] just as Eliot's moments of epiphany come, as if by chance, but always in moments of ambient or undirected silence. Silence by Cage, Thomas, and Eliot's appropriation allows Armantrout to collect these ambient noises; in Armantrout's case the found language and voices that 'needle/ the daylong day' and permit her to engage in what Cage called 'a purposeful purposelessness or purposeless play' provided 'a way of waking up to the very life we are living'.[626] Armantrout's poetry asserts that moments of self-consciousness can be arrived at as if by chance, though really this is through deliberate engagement in moments of undirected silence. However, at other times, her poetry asserts that they can be attained through repetitive and seemingly purposeless play, but play which leads to a type of hard-won attention to our own self-consciousness.

This hard-won approach to self-awareness can be used to explain the frequent reprocessing and extension of ideas seen in many of the poems in *Money Shot* and in 'Duration'. In 'Duration' Armantrout repeats and extends ideas of false virtual and media connections from 'The Line',[627] a poem from her earlier *Versed.* 'Duration' remains true to the previous poem's invitation to 'double back' and repeat the journey in order to understand or create 'narrative' from any journey of lived experience. 'Duration' evolves to consider temporality from a

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[625] Kyle Gann, *No Such Thing as Silence: John Cage's 4'33"*, (New Haven / London: Yale University Press, 2010), p. 122.
[626] William Duckworth, *Virtual Music: How the Web Got Wired for Sound*, (New York: Taylor & Francis, 2013), p. 13.
[627] Armantrout, 'The Line', in *Versed*, p. 90.

different angle, unlike the futility of motion in ‘The Line’, when ‘wide eye/ of the shrivelled man’ fails to withstand the ‘pull’ of the ‘screen’; ‘Duration’ takes up the torturous nature of repetition and media connection — ‘leaky faucet’, ‘needle’, ‘daylong day’. Despite this, ‘Duration’ remains more hopeful than ‘The Line’ because the degradation of consciousness[628] intimated in both poems, via ‘strand[s] of metal beads’[629] and ‘silver whistles’,[630] is lessened by our increased awareness and attention to it; an awareness corroborated by Armantrout’s allusions. These poetic dilations occur through repetition and slight variation paralleling Dawkins and Blackmore’s mimetic theory of evolution, which argues that all replicators evolve ‘over many iterations of this cycle … surviving copies will gradually acquire new properties’. Blackmore continues to assert that in memetic, *as well as* biological, evolution this mindless cycle ‘generates design out of chaos’. [631] Armantrout’s poetic cycle of repeating and revising allows her to progress her own metaphors including, in this case, those actually relating to evolution: ‘Monkey-see, monkey-do’, mimicry, ‘call to mimesis’, and ‘mocking-bird’ from her earlier poem ‘Translation’.[632]

Armantrout’s blackbird metaphor repeats the investigation carried out by the metaphor of the mocking-bird in ‘Translation’, except this time the bird song not only conveys a mistrust in communication but an expression of a lyric moment of temporal suspension and realisation. Though mistrust remains evident in the sinister echoes of ‘small pecks’, ‘Still on the air’ can be interpreted in two ways and its repetition encourages the reader to do just this. In the first instance it can be understood as a moment outside time, particularly following the preceding inclusion of blackbirds; an endorsement to be as birds in a position separate from the ‘flurries of small pecks’ that constantly come through the relentless ‘leaky faucet’ of a virtual and meme driven society. The birds represent the ability to be ‘in the present moment, attending equally to everything, [with] no distinction between [self] and the things happening’.[633] Just as the previous Eliotian allusions from the earlier ‘Translation’ and ‘The Line’, the final section highlights the paradox between stillness and movement, music and silence, with birds

[628] Both silver and strands are frequently used symbols in the communication of a link between consciousness, spirit and material presence. See J.E. Cirlot and Jack Sage, *A Dictionary of Symbols,* (London: Routledge & Kegan Paul, 1983). For the implications of silver, strands and beads e.g. ‘the silver cord… expresses path which binds the outer consciousness of man (his intellect) with his spiritual essence’, pp. 274–275 (p. 243 and p. xiii).
[629] Armantrout, 'The Line', in *Versed,* p. 90.
[630] Armantrout, 'Duration', in *Money Shot,* p. 49.
[631] Blackmore and others, p. 68.
[632] Armantrout, 'Translation', in *Versed,* p. 64.
[633] Blackmore, p. 243.

'at the still point of the turning world'.[634] The second reading of the line can be taken as one example of many in *Money Shot* that expresses the changing nature of the lyric moment and the lyric 'I' in the face of virtuality and an Internet society.

The increase in the lyrical interruptions in Armantrout's poetry can be considered using the arguments of Ramazani who examines the position taken by a 'globalised lyric subject'.[635] However, because of the 'imaginary cosmopolitanism' produced by our virtual global connectivity and the difference between physical and virtual global travel, Armantrout's lyricism does not unconditionally embrace Ramazani's assertion that the lyric is always capable of being 'trans-local, binding disparities [and] forging new and surprising connections in its travel across the globe'.[636] Retaining an element of suspicion with the voices 'on the air', which Montgomery links to users on Twitter,[637] her aims appear to move towards Ramazani's ideals for lyric and its potential to provide 'a universal model of lyric [which] remains in place even as it moves around'.

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Everything will be made new.

The precision coupling and uncoupling
and coupling,

the studied
blocking
and folding

have already begun.

2
Stillness of gauzy curtains

and the sound
of distant vacuums.

[634] Eliot, *The Complete Poems and Plays, 1909-1950,* p. 194.
[635] Jackson and Prins, p. 600.
[636] Jackson and Prins, p. 601.
[637] Montgomery.

Prolonged sigh
of traffic

and the downward
curve of fronds.

The spray
of all possible paths.

Define possible.

In *Money Shot,* Armantrout repeats the strategy applied in the majority of her other books by using the first poem of the volume, aptly named 'Staging', to give readers an insight into her current poetic manifesto. The allusions to science and the Internet in this poem suggest that the whole book represents a testing site; Armantrout intends to try 'all possible paths', yet the outcome is not certain 'define possible'. Poundian echoes in the first line: 'Everything will be made new' and indicates that this poetic hypothesis, like its scientific counterpart, should be 'testable by experience',[638] and will progress through the 'precision coupling and uncoupling' of a multiplicity of voices and linguistic methods. However, unlike the divergent identities of Erza Pound, the voices in this particular volume are not different identities to try on, but the different threads of Armantrout's own poetic inquiry; the 'spray' of which she permits herself to explore more comprehensively in her search for a way of expressing the world through words that are able to escape the encodings and influences they are themselves subjected to through 'the kind of language we use'.[639] Armantrout's unspoken questioning and inversion of Pound makes her allusion to Pound almost tongue-in-cheek, as her poetic method is actually far closer to Derek Attridge's definition of originality in which he claims is the creation of something 'that marks a significant departure from the norms of the cultural matrix within which it is produced and received'.[640] Recalling Attridge's argument, that creativity arises from the ability to 'create something new out of whatever materials one possesses', Armantrout's renewed focus on the everyday wakes us up to what already exists in the world; an awakening that creates novel perceptions of the world in a Badiou-like approach.

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[638] Errol E. Harris, *Hypothesis and Perception: The Roots of Scientific Method,* (Oxford: Taylor & Francis, 2014), p. 24.
[639] Chandler.
[640] David Attridge, *The Singularity of Literature,* (London: Taylor & Francis, 2017), pp. 51–52.

Armantrout notes that 'Staging' 'stages alternate perceptual sets' and that although she wrote 'Staging' before reading Badiou she feels that 'he articulates the issue I keep wrestling with more logically than I ever could or would'[641]— the issue being how to understand what lies beneath the surface of any multiplicitous object we identify as one, or what Badiou defines as ontological situations or 'count-as-one'. Badiou uses the axioms of set theory to 'consider the possibility [of] an ontology of multiplicity',[642] under which things that belong to ontological sets and share relational properties provide the validation for that set. Badiou 'defines a situation as any consistent or structured multiplicity that is defined by a count-as-one',[643] so, in the case of language as a situation, the multiple elements that belong to this set consists of sounds, letters, symbols, and other elements that join to form words and phrases and the code used to understand these elements.

Armantrout's search desires language to remain as neutral as possible in the face of these different 'perceptual sets', or, as in the case of Ramazani's lyric, to find a language that has a way of seeing and speaking which 'remains in place', even as our world and experiences 'move around'.[644] The difficulty that Armantrout finds with language is that it is made up of words and, as Dennett argues, words present 'the best examples of memes'. Dennett continues that words 'have clear histories of descent with modification of both pronunciation and meaning that can be traced back thousands of years in many cases'.[645] This means that the relationship between language and how we perceive the world is closely tied to memes, particularly the way that they are repeated and modified. Armantrout creates a metaphor for the cultural evolution of words, and therefore our perception of the world via their use, by considering the development of poetic expression through the scientific process of coupled reactions; for example, 'precision coupling/and uncoupling' refers to a scientific process in which 'the energy released in an exergonic reaction is used to drive an endergonic reaction… they occur in conjunction with one another'.[646] In other words, there is a physical transfer of energy and one reaction is dependent on another and this scientific process shares a likeness with the way that Armantrout extends her metaphors; partial meaning is frequently

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[641] Lerner.
[642] Ed Pluth, *Badiou: A Philosophy of the New*, (Cambridge: Wiley, 2013), p. 43.
[643] Gaetano Prampolini and Annamaria Pinazzi, *The Shade of the Saguaro / La Sombra Del Saguaro. Essays on the Literary Cultures of the American Southwest / Ensayos Sobre Las Culturas Literarias Del Suroeste Norteamericano*, (Florence: Firenze University Press, 2013), p. 494.
[644] Jackson and Prins, p. 570.
[645] Dennett, p. 177.
[646] Sandra Alters, *Biology: Understanding Life*, (London: Jones and Barlette Publishers, 2000), p. 91.

transferred through repetition and transformation and our cognitive development of an idea is dependent on our cognition of its previous occurrence.

In both cases, the scientific coupled reactions and poetic extensions are not only repetitive, but invisible, occurring for the most part underneath the surface of our awareness. Armantrout compares the 'composite entities'[647] she presents to Badiou's philosophical model, acknowledging that science similarly shows that 'any single object we will ever see is, in fact, a buzzing multiplicity, which we have found it practical to identify as a single entity'.[648] Roger Scruton gives a scathing assessment of Alain Badiou's work suggesting that he 'borrows the jargon of mathematics in order to create an illusory sense of mastery over problems that [he] lacks the ability to define'.[649] However, Armantrout's understanding of the deceptive nature of language, jargon and terminology outflanks his attack; for her the borrowing is akin to science. Her work repeatedly notes how scientific models make things comprehensible by presenting multiplicities as one, such as a human being as a presentation of one entity, despite the fact that beneath the surface biological systems and cells are engaged in multiple and continuous operations. Armantrout's metaphors can be processed in the interpretation of each poem as a single metaphor, but it is impossible for her and her readers to escape from the system of meaning that has been created as her metaphors travel and evolve across the course of her poetry, whether that poetry is contained in one volume or several. The 'composite entities' of 'gauzy curtains' and 'distant vacuums', 'curve of fronds' and 'possible paths' in 'Staging' indicates metaphorically at least some of the concerns to be developed in the subsequent poetry, concerns that despite previous exploration have been returned to the start through Armantrout's distinctive 'uncoupling' so that the path of all possible definitions can be travelled.

Armantrout's 'uncoupling' is really an attempt to create what first appears to be loose threads; to create questions that examine the invisible, or that which has been hidden from our conscious awareness by critical omission and for ease of explanation. Armantrout is driven to do this because she feels that the vast pool of questions, which both scientists and poets have found 'practical to identify' as smaller or singular objects, actually represent a gap which must be addressed. In true Armantrout fashion, the solution is not to find answers to

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[647] Lerner.
[648] Lerner.
[649] Mark Dooley and Roger Scruton, *Conversations with Roger Scruton,* (London: Bloomsbury Publishing, 2016), p. 155.

hidden questions, but to find out what questions we really should be asking. 'Attention' from *Veil* encapsulates this call to arms: 'But if lapses/*are* the dens/ strategy aims to conceal/ then you don't know/ what you're asking'. This assertion is repeated in several poems from *Money Shot* and *Just Saying,* increasing in confidence each time it is made, so that the statement of interest in *Veil* progresses to a statement of fact in 'Human' until it finally evolves into poetic manifesto in 'Scripture'. If this statement is followed through Armantrout's poetry, 'Scripture' can be seen as an example of Armantrout directing comments to critics: 'Not one of you/ with all your practice', highlighting the gap between knowing and what it is to know. In order to fully engage with Armantrout's poetry critics, and those who wish to navigate it, she must either stop repeating the questions she poses, or even trying to answer them, and instead should find a way to manoeuvre their interpretation through her loose threads and form their own questions. The point is that Armantrout's threads are not really loose but represent an essential contribution to the creation of a new extended target in a metaphor. By manipulating metaphor in this way, which is really a cover for a multitude of half-answered questions, Armantrout continually undertakes a meticulous reforming of the questions she is asking.

4.2 Hyper-Extended Metaphor and Metaphor Theory

Many of Armantrout's metaphors extend across poems and volumes of poems; I refer to these instances as hyper-extended metaphors, hereafter referred to as HEM. Across the body of Armantrout's work it is possible to identify patterns that constitute a particular system of metaphor use and, although parallels to other specific systems of metaphor can be drawn, most cannot be wholly contained by any one existing method of interpretation. The following analysis will consider the poetry in *Money Shot* and *Just Saying,* in light of the interpretations discovered in the chapter thus far, and will also employ the work of Max Black, Mary Hesse, Mark Turner, and Gilles Fauconnier, in an attempt to tease out the connections between how these theories understand metaphor and how we might interpret the unusual ways in which Armantrout uses metaphor in her poetic exploration.

Armantrout is interested in systems of meaning, how these are cognitively processed, and the gap this creates between 'what can be known and what it is to know',[650] somewhat

[650] Armantrout and Press, p. 55.

confusingly caused by a type of cognitive compaction that seems necessary in order to make larger systems thinkable. Fauconnier defines this as compression and argues that it is essential in order to understand ideas separated by large distances of space and/or time and to reduce the 'conceptual complexity of inputs'.[651] Neural inputs become complex when separated by impossible distances of time and space because we derive meaning from our sensory experience of the world. If this experience cannot be imagined it becomes necessary to compress the concepts into a more humanly manageable scale. Armantrout's poetry takes up this complexity by continually revisiting the conflict caused by the relationship of embodied experience and language, with such conflict arising, according to Raymond Gibbs, because 'human conceptual processing is deeply grounded in embodied metaphor, especially in regard to abstract understandings of experience'—[652] something of the embodied nature of experience which still remains whenever an abstract concept is used. Fauconnier's work offers an opportunity to find ways of interpreting Armantrout's HEMs, which unavoidably increase this cognitive compaction because they extend by the repetition of synonymic ideas and words. Scholars of cognitive poetics, such as Reuven Tsur, also take hold of these ideas referring to words as '"compact" concepts; … [or] tags used to identify the mental processes [that] do not convey the stream of information and its diffuse structure', an idea which runs parallel to Dennett's identification of words as 'memes' with 'clear histories of descent';[653] a descent that Armantrout's manipulation of language and metaphor at times attempts to control and at others wishes to escape from.

These different understandings of cognitive compaction, whether they are defined as 'tags', memes, or input spaces, are essential in the interpretation of Armantrout's poetry, which asserts the importance of simultaneously interrogating truth claims from multiple and diverse systems of knowledge. This is one reason why Badiou's arguments, again an argument for the existence and necessity of cognitive compaction, are meaningful for Armantrout, particularly those that relate to his concept of 'count-as-one'. In *Money Shot* Armantrout recognises that an individual's experience of the world is located in an Internet society and that individuals themselves become an instance of 'count-as-one', as representatives of a larger community or system; recognition solidified in the title poem of *Versed* with

[651] Fludernik, Freeman, and Freeman, p. 179.
[652] Raymond. W. Gibbs, *Embodiment and Cognitive Science*, (Cambridge: Cambridge University Press, 2005), p. 122.
[653] Dennett, p. 177.

Armantrout's cellular subversion of the Platonic 'writ large', developed in *Money Shot,* when an individual's experience of the world has a reciprocal effect on, as Chandler writes, the 'kind of language [they] use'.[654] By revisiting ideas, Armantrout's HEM develops the ideas of Fish and Chandler practically demonstrating that 'reformulating [of] something transforms the ways in which meanings may be made with it'.[655] Armantrout's HEM attempts to find ways of revealing the complicated systems of meaning between words and thought by compressing previous ideas and repeating the experience of them with variation.

Armantrout manipulates the terms of metaphor in her endeavours, as she writes in 'Staging', to 'define possible' answers to abstract questions. For example, if the question was around the definition of one's soul, the soul as the target remaining in a like manner to a scientific experiment, the dependant variable or the focus of Armantrout's observations are enacted through her controlled use of HEM. Her method, as with biological and memetic evolution, relies on repetition, variation, and selection. Tracking the course of a repeated target in a metaphor through a series of poems offers the best way to examine the manner in which it becomes hyper-extended, but due to the likeness HEM shares with other considerations of metaphor, such as Hesse's analogical models, conceptual integration networks and interaction theory, it is necessary to evaluate their claims beforehand. As Chapter Three provided an extended discussion of conceptual integration networks, particularly in light of cognitive compression, the following discussion will focus predominantly on Max Black's Interaction theory of metaphor and Mary Hesse's subsequent development of it; theories particularly relevant in the interpretation of Armantrout's poetry because of their use of a controlled filtration system of meaning and their arguments around the 'cognitive content'[656] of metaphor, a property which many philosophers, such as Black and Hesse, view as fundamental to the way in which metaphor operates and effects conceptual change. Most importantly for Armantrout's HEM is the emphasis that the work of both Black and Hesse places on how metaphor reveals similarities through repetition; in Armantrout this repetition is akin to a scientific method, in which a question is continually repeated with carefully monitored adjustments.

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[654] Chandler.
[655] Chandler.
[656] Michael A. Arbib and Mary B. Hesse, *The Construction of Reality*, (Cambridge: Cambridge University Press, 1986), p. 206.

4.3 Interaction Theory

Interaction theories look at the relationship between the terms of a metaphor, and the most useful theory of this type can be found in the work of Max Black who derived his theory in part from the work of I.A. Richards, especially his division of metaphor into 'tenor' and 'vehicle'[657] terms, which now forms part of the historical vocabulary in descriptions of metaphor. Black was quick to assert the differences between his and Richards's work, yet the 'transactional'[658] nature of meaning creation originating from Richards' remains constant. Black's theory suggests that meaning arises from the possibilities created by the interaction between these two terms, which he calls 'focus' and 'frame'. The focus is 'the word or words being used non-literally and the surrounding frame'.[659] The secondary subject or 'frame' filters the primary subject or 'focus', in other words the secondary subject modifies the primary subject. Interaction theory takes the known similarities between the two objects compared as a way of filtering the likely and actual content of a metaphor.

John Searle and Monroe Beardsley were key proponents of the interaction theory and Beardsley argued that meaning is created via the contradiction between a primary and secondary subject. According to Beardsley, the primary subject revokes the speaker's meaning to change the 'metaphorical potential' of the secondary subject in order to reach the important properties of metaphor, which are not the 'actual properties of things denoted by the metaphorical term, but believed properties'.[660] Searle drew attention to difficulties with the interaction theory by using a Gricean structure, raising concerns with how hearers can comprehend certain utterances like S = P when the speaker's meaning is in fact S = R. Searle's arguments sit between comparison and interaction theories because of his belief that the action required in the creation of a simile can and does happen in metaphor.[661]

Many of the arguments against an Interactionist view of metaphor relate to its apparent vagueness and contradictions, and philosopher and cognitive scientist Bipin Indurkhya argues that Interactionists do not explain 'what exactly this mysterious 'interaction' is nor specifies

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[657] 'The tenor, thus, is the main subject, while the vehicle is that to which the tenor is compared', therefore an atypical phrase or word would be the vehicle, whilst the underlying theme to which it relates is designated as the tenor. Manuel Bilsky, 'I. A. Richards' Theory of Metaphor', *Modern Philology,* 50 (1952), p. 152.
[658] Dennis Sobolev, 'Metaphor Revisited', *New Literary History,* 39. 4 (2008), 903–29, (p. 911).
[659] Ortony, p. 27.
[660] Monroe C. Beardsley, 'Metaphorical Senses', *Noûs,* 12. 1 (1978), 3–16. (p. 8).
[661] Ortony, p. 111.

exactly how the new similarities emerge'.[662] Another reason why the work of Hesse and Fauconnier is essential in interpreting Armantrout is that their theories actually move some way towards addressing this vagueness. Other objections come from Raymond Gibbs who highlights problems with the bi-directional mappings of the interaction theory. Despite Gibbs' belief that interaction is 'the dominant theory in multidisciplinary metaphor theory',[663] and his argument that some metaphors rely on implication complexes that can be taken as literal or metaphorical but that the interaction theory 'assumes that each assertion is literal',[664] his recent research revisits the transactional nature of Black's model writing that 'new meanings are made possible by the interaction of terms in a metaphor and not as a result of either shifting attention to marginal aspects of meaning or highlighting accidental properties of things'.[665] Gibbs' comments point towards the opportunity for a more controlled meaning creation via a deliberate selection of terms, a facility essential in the function of Armantrout's HEM.

Hesse argues that metaphor is essential for discovery and conceptual growth. In her book *The Construction of Reality,* she classifies three types of analogical model: positive, negative, and neutral.[666] Hesse argues that it is the neutral model which offers the most fertile environment for producing novel predictions in science, writing that poetic metaphors 'extend by association and analogy not by logic … scientific metaphors on the other hand are extended and developed by logic as well as by analogy'.[667] Armantrout's HEM attempts a rigorous and logical evolution of poetic inquiry meaning that Hesse's neutral model *can* be of use when interpreting Armantrout's metaphors. According to Hesse, the three types of analogical models used in scientific theory can be summarised in the following way: a positive analogy occurs when both the source domain and target domain are known to share at least some accepted or known propositions; in a negative analogy one or more propositions from the source domain are known to be absent, or do not hold in the target domain; and finally, in a neutral analogy it is unknown whether accepted propositions from the source domain hold in the target domain. Further clarification can be found in Hesse's *Models and Analogies in*

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[662] Bipin Indurkhya, *Metaphor and Cognition: An Interactionist Approach*, (Boston: Springer Netherlands, 2013), p. 3.
[663] Raymond W. Gibbs, *Metaphor Wars*, (Cambridge: Cambridge University Press, 2017), p. 5.
[664] Raymond W. Gibbs, *The Poetics of Mind: Figurative Thought, Language, and Understanding*, (Cambridge: Cambridge University Press, 1994), p. 237.
[665] Gibbs, *The Poetics of Mind: Figurative Thought, Language, and Understanding*, p. 233.
[666] Ibid.
[667] Arbib and Hesse, p. 157.

Science in which she uses the billiard ball model for the dynamical theory of gases to illustrate positive, negative, and neutral analogy:

> 'When we take a collection of billiard balls in random motion as a model for a gas, we are not asserting that billiard balls are in all respects like gas particles … we are in fact saying that gas molecules are *analogous* to billiard balls … some properties of billiard balls [are not] found in molecules … properties we know belong to billiard balls and not to molecules [are called] the *negative analogy* of the module.'[668]

It follows that those properties which billiard balls and molecules are known to share, such as movement and collision, can be known as the positive analogy and those properties which are as yet unknown are referred to as the neutral analogy of the model. These models display clear resemblances to Black's Interaction theory as they filter via the grouping of known similarities.

According to Hesse, it is not always possible to know whether the constituents of an analogical model share complete likeness and the transference of knowledge happens via a series of systematic mappings in an identical manner to the comprehension of a metaphor. Frequently, the terms metaphor, analogy, and simile are used interchangeably in science writing and writing on science communication, though Hesse consistently refers to analogy when defining her models. In her later book, *The Construction of Reality,*[669] she tracks the historical arguments around the differences between metaphor and analogy without arriving at a resolution. Therefore, at this point it is helpful to briefly discuss some of the commonly accepted differences between metaphor and analogy, and Hesse's use of the term analogy in place of metaphor.

Philosopher Paul Ricoeur suggests that it is a mistake to treat metaphor in terms of analogy. According to Ricoeur, analogy is often utilised as a generic term to discuss metaphor, metonymy, and simile. Ricoeur argues that analogy is often used in a systematic manner[670] and has the ability to stand as a logical argument as it focuses on how two objects, or pairs of

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[668] Mary B. Hesse, *Models and Analogies in Science*, (Indiana: University of Notre Dame Press, 1966), p. 9.
[669] Arbib and Hesse.
[670] Paul Ricoeur, *The Rule of Metaphor: The Creation of Meaning in Language*, (London : Routledge, 1978 (2003 printing)), p. 220.

objects, are alike in some way; if this is the case then it follows that further similarities can be logically deduced. 'Analogy can be viewed as a kind of highly selective similarity, people implicitly focus on certain kinds of commonalities and ignore others.'[671] The selection of terms in analogy are consciously directed to achieve specific understanding and accurate interaction, as in the case of both metaphor and metonymy where there is usually a more 'immediate recognition of resemblances'.[672] Consequently, the recognition of a real similarity between the two objects can be derived through predictions. Metaphor does not generally adhere to the same logic, it is not necessary to invoke any similarity or logic between objects, though that is not to say that this is not something that metaphor is capable of achieving.

Despite differences between the application and use of metaphor and analogy, the features attributed to analogy, and applied by Hesse's models, are useful in interpreting Armantrout's HEM because of their more explicit use of similarity and, consequently, repetition; it is not only the rhetorical figures of analogy and metaphor that are of concern but the underlying cognitive structure. As shown, analogy is typically considered to be the more rational relation of one object to another in order to highlight potential similarities, while metaphor is thought to be less contained by a logical framework. Roald Hoffman argues that scientists wishing to explain difficult concepts use metaphor 'intuitively' and that 'a naked metaphor clearly shows the analogy's limitations, its capacity for misinterpretation and its productive extensions',[673] thus observing the same generative power of metaphor as Hesse does in analogy. The embodied nature of metaphor accounts for some of its intuitive use and weakens arguments that suggest it is not bound by rational frameworks because, as Fauconnier has shown, in order to process metaphors, we have to compress them to a more manageable scale. In scientific theory, metaphor 'begins with a similarity between the system under exploration (the primary system) and an already known physical system (the secondary system)'.[674] This application of metaphor is clear in Hesse's description of what she terms a 'positive analogical model' through which she hoped to develop the ways in which scientists used metaphor and analogy. A model for Hesse is defined as 'any system, whether, buildable, picturable or imaginable, or none of these, which has the characteristic of making a

[671] Ortony, p. 442.
[672] Mary Brenda Hesse, *Science and the Human Imagination. Aspects of the History and Logic of Physical Science*, (London: SCM Press (p.142), 1954); Hesse.
[673] Roald Hoffmann, 'Marginalia: The Metaphor, Unchained', *American Scientist*, 94. 5 (2006), 406–07, (p. 406).
[674] Michael Gordin Peter Galison, David Kaiser, *Quantum Mechanics: Science and Society*, (London: Taylor & Francis, 2013), p. 55.

theory 'predictive'.[675] Early in *Science and the Human Imagination,* the first of Hesse's seven books, all of which are related to the scientific analogy and models, she writes that 'analogical description is not literal description'.[676] Unlike the key metaphor theorist Donald Davidson, who believed that metaphors could only communicate the most literal interpretation of the words in a sentence, given their context, Hesse argues that analogy bears some relation to reality and 'to the fertile imagination which selects appropriate analogies from familiar experience and familiar types of language, and thus exhibits relations between one aspect of experience and another'.[677] All language according to Hesse has the potential to be metaphorical.

Hesse's early account shares a likeness with Searle's key claim that the words in a sentence are not intended to be taken literally but are used to somehow communicate the speaker's metaphorical meaning. For Searle, 'the sentence means one thing ("S is P"), but the speaker's meaning is something different ("S is R")'.[678] To explain this, Searle uses the metaphorical statement: 'Richard is a Gorilla'. In order to understand the possible content, you begin by examining what the distinctive features are of 'R' and then the actual content is then determined by which of the qualities determined in the possible properties are likely qualities of 'S'. Therefore, the speaker's meaning could be that gorillas are fierce, but if ethological investigation shows, as Searle says it does, that gorillas are shy then this statement of similarity would be false. The difficulty here is that Searle does not provide a process for separating speaker meaning from the popular opinion on gorillas. Simply, Searle's argument is that 'in many cases the metaphorical statement and corresponding similarity statement cannot be equivalent in meaning because they have different truth conditions'.[679]

The arguments of Searle in proximity to Hesse are important for two reasons: firstly, although Searle uses this example to argue against the comparison theories of metaphor, it follows that in filtering possible properties to reach a plausible conclusion it is necessary to select appropriate properties from one object and apply them to another; secondly, it

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[675] Hesse, p. 19.
[676] Mary Brenda Hesse, *Science and the Human Imagination. Aspects of the History and Logic of Physical Science,* (London: SCM Press, 1954), p. 13.
[677] Hesse, *Science and the Human Imagination. Aspects of the History and Logic of Physical Science*, p. 13.
[678] Ortony, p. 115.
[679] John. R. Searle, *Expression and Meaning: Studies in the Theory of Speech Acts*, (Cambridge: Cambridge University Press, 1985), p. 90.

exemplifies several of the key arguments by making a clear distinction between literal and metaphorical. Hesse develops this type of systematic reasoning and makes substantive claims against such rigid distinctions, arguing for what she terms a 'network theory of meaning'[680] whereby metaphor, like language, is dependent on a mutable system of meanings; such a system of metaphor is a crucial element of Armantrout's HEM. Hesse recognises that some metaphoric discourse retains a basis in truth-values, but that difficulty arises when dealing with poetic metaphor, where the 'constraint of prediction and test in the natural world is inappropriate'.[681] In this situation, we need to move towards a kind of social knowledge, for example seeing man as 'clockwork'; this type of seeing-as connects metaphor to perception, but Hesse wants to move metaphor even further into the realms of a 'possible social or individual world—',[682] a world in which controlled use of metaphor changes perception and meanings. Hesse recognises the need for a metaphoric theory of reference that can be applied in both science and poetry so that our 'experience of the world is not limited to the empiricist version of it'.[683]

4.4 Hyper-Extended Metaphor in *Money Shot* and *Just Saying*

Armantrout's HEM attempts to uncover knowledge and meaning hidden beneath the 'crust' of metaphor, and the HEM in her poetry blends similar, but adjusted, input spaces enacting the kind of bisociative thinking first defined by Arthur Koestler and fleshed out by Fauconnier.[684] Armantrout's HEM combines features from the work of Black, Fauconnier, and Hesse and, though these theories are useful interpretative tools, it does not follow that this is a conscious action; however her interest in metaphor, language, and other socially motivated systems of meaning mean that her poetic scrutiny of all of these issues *is* deliberate and this interest drives her attempt to separate and uncover words from their associations. Armantrout's process of creation, destruction, and repetition follows what Koestler claims is

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[680] Harmke Kamminga Soraya de Chadarevian, *Molecularizing Biology and Medicine: New Practices and Alliances, 1920s to 1970s*, (London: Taylor & Francis, 2003). p. 269 Network Theory of Meaning: *'Hesse argues that the theoretical significance of any observation is defined relative to a network of inter-related network of facts and postulates. All the various terms in the network, and relationships between them, are provisional and subject to adjustment, though any such adjustment will have implications for the other terms in the network. But unless the whole network of knowledge and meaning is to collapse into incoherence, certain terms and relationships must remain fixed, by agreement of convention, at any one time'.*

[681] W.T. Harris, *The Journal of Speculative Philosophy*, (Pennsylvania State University Press, 1995), v. 9, p. 131.

[682] Arbib and Hesse, p. 170.

[683] Hesse, *Science and the Human Imagination. Aspects of the History and Logic of Physical Science*, p. 59.

[684] See the earlier discussion on Cognitive Interaction Networks Chapter One, p. 24.

'the logical pattern of the creative process' for both artistic originality and scientific discovery, which is one that 'consists in the discovery of hidden similarities'.[685] Only through similarities can repetition be achieved and repetition is crucial to the success and evolution of Armantrout's HEM. Armantrout's metaphors don't only look for similarities, but the similarities that they do find are then progressed to the next repetition and through Hesse's analogical models, we find a framework for understanding how Armantrout's HEM selectively repeats similar features in order to generate new meanings and sometimes predictions.

Armantrout's HEM can be visually represented by adapting Fauconnier and Turner's basic diagram[686] and applying the principles of Hesse's models and Black's transactional theory:

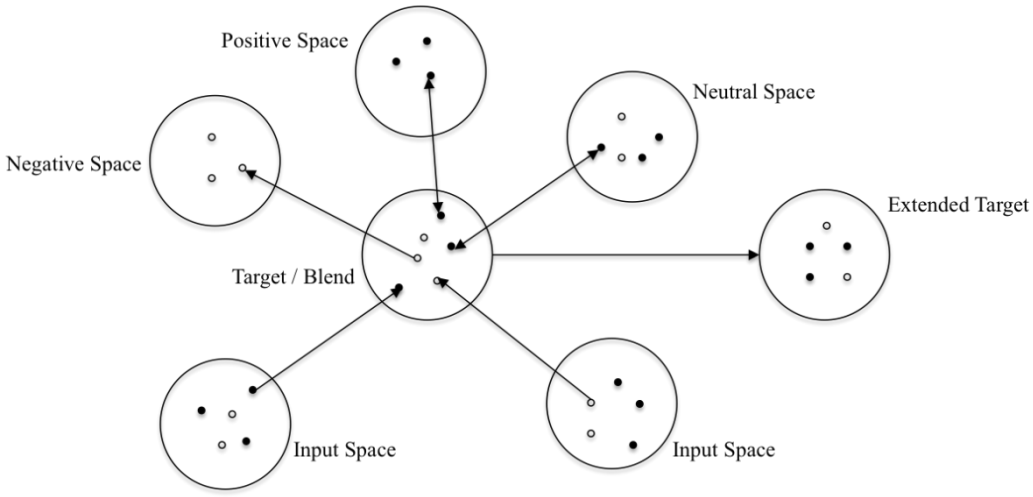

Figure 2: Hyper-Extended Metaphor

The larger circles represent what Fauconnier and Turner define as mental spaces: 'mental spaces are small conceptual packets constructed as we think and talk for the purposes of local understanding and action. They are interconnected and can be modified as thought and discourse unfold.[687] The two lowest circles are input spaces, though in Armantrout's poetry there can be more than two acting in the creation of the target/blend, which is the central

[685] Koestler, p. 27.
[686] See Chapter 3, p. 91.
[687] Dominik Lukeš Christopher Hart, *Cognitive Linguistics in Critical Discourse Analysis: Application and Theory,* (Newcastle: Cambridge Scholars Publisher, 2009), p. 109.

circle. I have used the language of both conceptual integration networks and conceptual metaphor theory for the central circle as both are important labels for understanding how Armantrout processes metaphor—her aim being to explore the simultaneous 'blend' of information received from input spaces and to create a new 'target' of understanding for the abstract question at hand. Although both shared and non-shared features are necessary in the creation of the target/blend, following Hesse's model those that are definitely known to be present in only one of the metaphorical relations are moved to the negative space, top left.

The remaining features whose positive or negative status remains unknown move to the neutral space, which combines with the positive or shared features from the input spaces identified in the blend to create an extended target. This extended target is then explored again and undergoes the same process as in the first instance. The following discussion will explore the ways that this method for understanding Armantrout's metaphor can be used in practical interpretation.

To be "dressed"
is to emit
"virtual particles".
*
The spirit of "renormalisation" is that

an electron
all by itself

can have infinite
mass and charge,

but, when it's "dressed"…
*
A toddler stares at us
till we look up.

"Flirtatious", we call it.
She waits
until we get the joke

about being here,
being there.

In ‘Dress Up’, an early poem from *Just Saying*, Armantrout is concerned with the relationship between a female toddler and an electron. It’s a ‘relationship’ that exists loosely. Armantrout enables the ideas to play concurrently in much the same manner as toddlers play with each other in reality; sociologist Mildren Parten famously defined this as parallel play: ‘children play side by side but interact very little and do not try to influence the behaviour of other players’.[688] This is the aim of Armantrout’s juxtaposed images and metaphors; they aim to retain their independent meaning before any relations are considered. This creates a kind of impartiality in the metaphorical correspondences, which seems to fascinate Armantrout, and makes the transfer of correspondences to the neutral space more viable; this space helping to generate new meanings, which offers one reason why the resonances from her metaphors seem so far reaching. She writes:

> ‘I am obsessed with metaphor, I suppose, but only in the broadest sense of the term, not metaphor as a rhetorical device—a way to describe thing A (real, stable) in terms associated with term B (illusory, unstable). I’m interested in metaphors where the two terms destabilise one another, where the possible meanings are either equally viable or equally unviable. I’m happy when a metaphor like that develops in my work. One place where I think that happens is “Dress Up” in *Just Saying*’.[689]

These comments help to account for the unusual way that metaphor is processed in Armantrout’s poetry, which, as indicated by the above diagram, results not in filtering to arrive at a smaller number of likely correspondences and towards an ‘answer’, but in achieving an extended target for further investigation.

‘Dress Up’ is not the first time that metaphors relating to hiding, seeking, and unpredictable ‘dressed up’ particles have appeared. Several poems in *Money Shot*: ‘Colony’, ‘The Air’, and ‘Human’, build on a fickle sense of duality and imagined discovery, which is then refuted and reformed in the first poem of *Just Saying,* being *‘*Scripture’. This means that by the time readers arrive at ‘Dress Up’ the metaphor of the ‘dressed’ electron has undergone several rounds of conceptual processing and carries more implications than its first appearance in

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[688] Katherine Kipp David R. Shaffer, *Developmental Psychology: Childhood and Adolescence*, (California: Cengage Learning, 2013), p. 570.
[689] Harriet Staff, 'Catherine Wagner & Rae Armantrout Talk Shop', *Poetry Foundation,* (2013), <https://www.poetryfoundation.org/harriet/2013/08/catherine-wagner-rae-armantrout-talk-shop> [accessed 10 October 2017].

'Colony'. In 'Dress Up', Armantrout draws attention to the technique of 'renormalisation', or 'dressed particles', which was first developed in quantum electrodynamics as a way of dealing with the impossibility of calculating infinities in an electron's 'mass and charge'. In renormalisation, figures for mass and charge are inserted to account for self-interactions. Armantrout destabilises the concept of renormalisation, which according to A.V. Shibeko and M.I. Shirokov is employed to make 'disconnected' phenomena understandable. They write: 'being not satisfied with the multitude of disconnected phenomenological explanations we strive for a unified description of nature. [Relativistic Quantum Field Theories] RQFT's are the best-known candidates for unified theories. Firstly, they give a qualitative and natural consideration of particle creation and destruction; and secondly, local RQFT's ensure, in a sense, the relativistic causality unlike phenomenological approaches'.[690] Armantrout attempts to destabilise dressing as a metaphor for unification, but it may first be useful to look at how and why she does so; answers for this can be proposed by looking at the poems identified above, which explore the similar problems that have led the questions to this point.

'Colony' in *Money Shot* looks at the fluctuation between one and many and between being and indecision.

As if
the space around
each particle were filled
with countless
virtual particles.

*

And the Lord said,

"I am aware of weighing options,

of dither,

But the moment of decision
has always remained obscure."

[690] A.V. Shebeko M.I.Shirokov, 'Unitary Transformations in Quantum Field Theory and Bound States', *Phys.Oart.Nucl.* 32 (2001), 15–48, (p. 16).

*

Which one of these
do you most closely resemble?

Green stucco bungalow,

Four brown gargoyles
on its flat roof

Beehive Diva;

Rehab Idol

*

Semi-transparent,

each

stinging jelly
is a colony.

As in ‘Dress Up’, images are placed side by side without openly claiming acquaintance with one another; a system that mirrors the issue highlighted by the title of the poem—here ideas form a colony in which they fluctuate between working together or functioning independently. Armantrout provides these in images of particles, biblical proverbs, potentially grotesque or elaborate architectural or personal adornments, and jellyfish, which as siphonophores do not fit neatly within the known structures that define a colony or a single complex animal. In the first section, particles are surrounded by ‘virtual particles’ whose existence defies certain laws of energy so are explained using Werner Heisenberg’s uncertainty principle. According to Arkady Plotnitsky, ‘the concept of virtual particle formation in quantum field theory, [refers to] the unstable, fleeting forms of order that emerge from and disappear back into the foaming bubbling of chaos’.[691]

[691]Arkady Plotnitsky, *The Principles of Quantum Theory, from Planck's Quanta to the Higgs Boson: The Nature of Quantum Reality and the Spirit of Copenhagen,* (Indiana: Springer International Publishing, 2016), p. x.

In ‘Colony’ the first two images relate to science and biblical proverbs and both images express moments of doubt— ‘as if’, ‘dither’. The shared features of doubt and flux move to the positive space and contribute to the extended target. In the first image, ‘virtual particles’ represents a constant flux between the transient and material nature of existence at a microscopic level, a concept as difficult to grasp as it is to observe. The second image is equally challenging and employs an almost Carrollian logic to the biblical proverb: ‘All one’s ways may be clear in one’s own mind, but the Lord weighs the spirit’.[692] Under Armantrout’s manipulation, this proverb is made into a complex paradox around the existence of free will, or if Armantrout’s words are rephrased, it considers how to weigh the choices of an individual before they have actually decided on a course of action. This reforming of the biblical proverb places the properties of free will alongside virtual particles whose existence is personified and vanishes at almost the same instant it materialises.

Features of movement in all or no direction at once are transferred to the new extended understanding of particle and are reformed again in ‘Human’ from *Money Shot:*

1
Rolled to the brink
a subatomic particle
will sometimes turn away.

This is called anti-tunnelling.

Or perhaps not
sometimes
but some part of it
will turn.
Does this mean
the world is human?

“Whenever any wave encounters an
abrupt change
in conditions, even a change
favourable to its propagation,
some of it
will be reflected back”.

[692] (prov. 16.2) Bradbury Thompson, *Holy Bible: King James Text: Modern Phrased Version*, (Oxford: Oxford University Press, 1980), p. 704.

"Uncertainty" predicts
that the more clearly we understand

(waves) (particles)

The less clearly
we see
what it means to be reflected.

2
The rhythmic wince
of the artificial candles
on a dark morning
calls attention

as if calling

outside
a child yells "Mom-my!"
again and again.

Hopeless persistence
is called petulance

so that it is possible
to refer

to the petulance
of the lost.

In this poem, Armantrout refers to the quantum mechanical phenomenon of anti-tunnelling, which occurs when particles behave with a wave-like function. Armantrout's poem provides almost an exact quote from an article in *Scientific American*: 'whenever any wave encounters any abrupt change of conditions—even ones more favourable to its propagation—some of it will reflect back'.[693] In quantum mechanics, particles behave in unexpected ways often in complete opposition to predictions at the ordinary or macroscopic scale and Armantrout asks,

[693] George Musser, 'New Quantum Weirdness: Balls That Don't Roll Off Cliffs', *Scientific American,* Dec, 1 2008 (2008), <https://www.scientificamerican.com/article/new-quantum-weirdness/> [accessed 1 February 2017].

'does this mean/ the world is human?' A question she can ask, despite the seemingly negative correspondences between input and blend, because of the ideas extended from her reformed proverb. Armantrout continues that 'the more clearly we understand/the less clearly/we see/what it means to be reflected'. A line, which confirms she is extending ideas from the earlier biblical references in 'Colony' and suggests that there is something unpredictable about the course an entity, be it human or particulate, travels along. Equally, Armantrout calls into question "uncertainty" itself with her use of parenthesis around the word in the poem 'Human' and the carried over questions from the previous poem 'Colony' of whether 'the Lord' can somehow weigh the complexity of the human spirit. This leaves readers questioning metaphors, scientific theory, and Armantrout's own poetic interpretation; for example, do the parenthesis indicate that Armantrout is sceptical that uncertainty exists more generally, or because scientists refuse to accept uncertainty in their use of calculations to account for the unaccountable. This means that some features of particles now move from a positive to a neutral space, which is then transferred to the extended target again.

'Human' provides a strong example of how far Armantrout's metaphors extend by referencing the poem 'Attention' from her earlier volume *Veil.* Armantrout does this not only by 'call[ing] attention' to the name of the poem, but by also repeating the cries of a child from it. This enables her to build on the question of the role language plays in constituting identities and the Lacanian idea that we remain detached from our real identities.[694] 'Human' rephrases the earlier statement from 'Attention': 'you don't know/what you're asking', because by the time we reach this point the apparent unpredictability of the universe at a subatomic level makes the question almost infinitely larger; we cannot hope to comprehend Lacan's mirror stage when we can't know 'what it means to be reflected'. This demonstrates again how Armantrout manipulates scientific theory to generate 'more questions than answers'.[695]

Throughout *Money Shot,* Armantrout establishes the inherent uncertainty and difficulties in knowing one's own identity—we are all, she says, 'composed/of dimensionless points', suggesting that it is futile to make predictions about expected outcomes, 'it rhymes, and does not confirm', or metaphorical directions of travel down 'possible paths';[696] yet Armantrout

[694] See Chapter 2, p. 56.
[695] See Chapter 1, p. 3.
[696] 'Spin', p. 22, 'Day', p. 27, 'Staging', p. 1.

pursues another line of inquiry around the tendency science, religion, and humans have of creating structures for problems in an attempt to understand them, and she examines these structures repeatedly from different angles. In 'Colony' humans apply structures either in the form of an omnipotent creator, scientific principles such as those of Heisenberg, or in identifying your own container to assist in the classification of your own existence— 'Green stucco bungalow' or 'Beehive Diva'. These ideas are repeated and amended in 'The Air', where our understanding of the fundamental constituents of matter are 'wrong' but remain destined to repeat indefinitely because they are 'immortal'. As seen in 'The Air', Armantrout's repeated metaphorical questioning evolves into memes at which point they are given 'hair-do[s]' and 'split-screen[s]'. These modifications are an essential part of the continual structuring and restructuring that Armantrout carries out in her determined rejection of labels, structures, and resolutions, which she feels limits her ideas more generally. In Armantrout's own repetition, readers are able to detect a note of warning on the danger of repetition particularly when that repetition attempts to resolve and enclose.

In 'Over' Armantrout writes 'we have very few/cards/ left to play', hyper-extending the bird metaphor given in *Versed,* as well as earlier in *Money Shot* with the poem 'Duration', whose 'silver whistles/of blackbirds' become 'a bird's metallic voice', which 'drops' its warning 'straight/through the blaze'. This hyper-extension is confirmed with the shared properties implied by 'silver and 'metallic' and by the 'voice on the air' in 'Over', making it clear that the same problems of self-consciousness in a media driven society are under consideration. At this point in the development of the metaphor, Armantrout uses tension to provide the topology for the blend and uses language that puts notions of time, quantity, and freedom under pressure: 'you are finishing this level', 'we have very few cards/left', 'need/to start juggling', and 'get out of this hole'. This leads to a different purpose for the bird call, especially considering the title of the poem itself. Although these bird input spaces are integrated into a single event, in this case, rather than the previous nature of the bird calls: 'check to see', 'still on the air' and 'silver whistles', which only punctuate or 'needle' the air, the bird call in 'Over' 'drops straight through'. This move away from repeating or playing the same 'cards' suggests a turning point in Armantrout's thoughts and technique and moves previous shared or positive features to a negative space.

The repetitions and evolution of dressing up and repetition itself reaches a climax in the first poem of *Just Saying:*

Your violins pursue
the downhill course,
of streams,

even to their wild
curls and cowlicks.

To repeat
is not to catch.

*

Consider the hummingbirds,
how they're gussied up

and monomaniacal
as the worst (or best)
of you.

Consider the bright,
streamlined emergency
they manifest.

*

My leaves form bells,
topknots,
small cups of sex,
overweening, unstoppered.

Not one of your
with all your practice

is so extravagantly
coiffed.

As the title of the volume *Just Saying* suggests, the 'Scripture' it contains may be critical or distasteful for some, but Armantrout absolves herself of responsibility because she is 'just saying', applying an idiom that juxtaposes the solemnity indicated by the title of the first poem in the volume. Considering that the book's first three words, the title and the title of the first poem, create significant contradiction it is hardly surprising that despite an evident

shift, readers are not easily able to map its course. In *Just Saying,* Armantrout's poetry attempts, in like manner to the bird in 'Over', to 'drop straight through' the 'gussied up' language of our media-driven culture by 'pursuing' it, ventriloquising it— 'to repeat/is not to catch', 'considering' it and examining its 'practice'. In this way, it could be argued that Armantrout's constant interrogation and rejection of classification diverts her poetry back towards the path of the Language poets she previously deviated from, but her immediate and continual lyricism negates this theory. Armantrout meets the lyric 'I' head on but, instead of using her poem to move readers 'beyond the page in order to understand [a] mysterious protagonist',[697] she includes readers in the lyric 'we' because of the inescapable ties we all share as to how language constitutes our recognition and the formation of ourselves as 'I'. Armantrout does not want readers to only attempt an understanding of her 'leaves' or those of a poetic protagonist, but to 'consider' the 'wild /curls and cowlicks' of their own music.

The 'streams' metaphor is particularly appropriate for the subsequent poetry, which like water moves through a cyclical process of change that continually repeats. The images of water, 'hummingbirds', and 'streamlined emergency' are 'unstoppered' and represent the vitality and energy with which Armantrout's poetry interrogates the identification of the world and self through language, an idea which she is 'monomaniacal' about. The poetry in *Just Saying* is not a theoretical study, 'not one of you/with all your practice' but is a poetry of action that is not afraid to tear itself apart and dress itself up again 'extravagantly coiffed' with 'bells, / topknots'. Armantrout's poetry remains constant to its original poetic manifesto, yet in this volume it has clearly evolved by means of variance and repetition. The birds and water in 'Scripture' are hyper-extended from 'Translation' in *Versed:* 'Repeat wake measurement. / "Check to see" / "Check to see", birds say, "that enough time has passed"'.[698] However, in this repetition they are modified with more urgency and alarm in 'Scripture's' call to be awake to language with its high-pitched 'hummingbirds' in proximity to 'bells' and 'emergency'. Armantrout's poetry has progressed from carrying out 'Translation[s]' of received language into a poetic creed to live by or 'Scripture', which recognises that like Armantrout's earlier memes, language and poetry must 'evolve for [its] own sake, not for the sake of individual humans or their genes'.[699]

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[697] Francesca Beretta, 'The Lyric I as Other Mind', *The Oxford Culture Review,* (2016), <https://theoxfordculturereview.com/about-2/> [accessed 25 November 2017].
[698] Armantrout, 'Translation', in *Versed,* p. 64.
[699] Francisco J. Ayala, p. 256.

The selection of poems from *Money Shot* and *Just Saying* discussed above: 'Colony' 'The Air', 'Human', 'Duration', 'Over', 'Scripture', and 'Dress Up', demonstrates how Armantrout uses the idea of dressing up as a metaphor for perceived knowledge and unification, and in these poems these ideas are continually repeated and destabilised. By mapping Armantrout's HEM, their input spaces, and their analogical correspondences, it is possible to see how they contribute to the creation of an extended target, such as the one seen in 'Dress Up'. Several input spaces contribute to the creation of the dressing HEM including: particle physics, mother-child relations, children's games, birds, and the media. Mapping these spaces helps to understand how they contribute to the blend and an example of mappings for the input space of particle physics is provided below:

Mappings for the Particle Physics Space

In 'Colony':

Particle	Metaphor for	Quantifiable entity
Virtual particle	Metaphor for	Unquantifiable entity
Space	Metaphor for	Accumulation

In 'The Air':

Quarks	Metaphor for	Any unobservable, scientific entity
Quirk	Metaphor for	Faith (as antiquark to science)
Dead-air	Metaphor for	Empty space

In 'Human':

Subatomic Particle	Metaphor for	Human
Anti-tunnelling	Metaphor for	Uncertainty
Wave / Particle	Metaphor for	World or Humans
"Uncertainty"	Metaphor for	Objective knowledge

In ‘Dress Up’:

Dressed	Metaphor for	Reduction /Expansion
Virtual particles	Metaphor for	Disruption
Renormalisation	Metaphor for	Depersonalisation
Electron	Metaphor for	Human

The journey of particles, electrons, quarks, and their correspondences through this input space becomes the journey of an individual who is subject to different forces and laws. The poems move between transitory moments of tangibility and immateriality so that the ground is constantly shifting, a situation that Armantrout works to maintain. In ‘Colony’, Armantrout looks at different types of unobservable drivers for society and the unceasing search for answers and understanding. Particles and virtual particles accumulate together, functioning as a colony, ‘a highly integrated group with specialised members’,[700] in which neither element can exist without the other and like the jelly fish in the same poem, a member of the siphonophorae group, their behaviour ‘parallels the evolution of functional specialisation at other levels of biological organisation, such as between cells in a multicellular organisms’.[701] Yet more crucially for Armantrout, at this point, is that both the individual and complex resist easy classification. In ‘The Air’, ideas of seen and unseen are explored again with ‘quirks and quarks’, the later a fundamental, but not directly, observable constituent of matter. This time the ‘space around’ the particles becomes dead-air, something that science tells us does not exist, ‘according to quantum mechanics, a vacuum is not empty space. A consequence of the uncertainty principle is that particles or energy can come into existence for a fleeting moment’;[702] these particles are virtual particles and they borrow energy from a vacuum for a very short amount of time to appear and disappear. In these two poems the jellyfish and the

[700] Robert .G.B. Reid, *Biological Emergences: Evolution by Natural Experiment*, (Massachusetts: MIT Press, 2009), p. 125.
[701] Casey W Dunn, 'Complex Colony-Level Organization of the Deep-Sea Siphonophore Bargmannia Elongata (Cnidaria, Hydrozoa) Is Directionally Asymmetric and Arises by the Subdivision of Pro-Buds', *Developmental dynamics*, 234. 4 (2005), 835–45, (p. 835).
[702] C. Riek and others, 'Direct Sampling of Electric-Field Vacuum Fluctuations', *Science*, 350. 6259 (2015), 420–23, (p. 420).

quarks import different information into the HEM blend with the ideas of one, and many others, along with unobservable ingredients of matter'. Though their features are not directly shared, both resist clear identification, which provides relation across the different input spaces.

The next, most obvious occurrence of the particle physics input space is in the poem 'Human', which questions whether this state of constant flux is really the true measure of what it means to be human. Armantrout extends this question to all levels of existence, using the poem to look at the effect and behaviour of humans parallel to particles under pressure, questioning how it may be possible to have an awareness of ourselves when science and experience both seem to argue that things are frequently the opposite of what was first thought. Jeremy Bernstein highlights Heisenberg's early statements on uncertainty: 'The uncertainty principle refers to the degree of indeterminateness in the possible present knowledge of the simultaneous values of various quantities with which the quantum theory deals; for example, it does not restrict the exactness of a position measurement alone or a velocity measurement alone'. Thus, suppose that the velocity of a free electron is precisely known, while the position is completely unknown'.[703] In other words, the more precisely the position of a particle may be known, the less its momentum can be understood, or as Armantrout puts it, bringing humanity close to particles, 'the more clearly we understand …/ the less clearly / we see / what it means to be reflected'. Ideas of self-awareness and particle physics are brought together, providing an integration in the HEM blend which subtly 'calls attention' to previous poems and to ideas of humans as colonies of particles and anti-particles that don't know what questions to ask because, like their particles, question and answer can only vanish on meeting.

Finally, when the input space is applied in 'Dress Up' it places ideas of being lost and found and the apparently innate human desire to contain knowledge beneath the space of children and children's games, particularly those relating to camouflage, questioning the validity of such an attempt. The dissimilar nature of these two input spaces is essential in the creation of the HEM blend, because it forces us to create new connections that are not shared by either input space, but that help us to create and 'maintain appropriate connections between

[703] Jeremy Bernstein, *A Bouquet of Numbers and Other Scientific Offerings*, (Singapore: World Scientific Publishing Company, 2016), p. 223.

spaces'.[704] At this point in 'Dress Up', readers may be tricked into thinking that they've reached a broader understanding of what the poet means when she engages science to discuss dressed particles, but in true Armantrout fashion the first two sections appear to be contradictory. Firstly, Armantrout writes 'to be "dressed"/ is to emit/ "virtual particles"', indicating an expansion or a release, but at the end of the second section the electron's 'infinite/ mass and charge' is conversely 'but' reduced by the same 'dressing'. This contradiction is led by the scientific theory behind the label 'virtual particles', a misleading and paradoxical term; in fact 'virtual particles' are not particles at all and generally refers to 'a disturbance in a field that will never be found on its own, but instead is something that is caused by the presence of other particles, often of other fields'.[705] In other words, the 'virtual particles' are only observable via their effects, which are the disturbance they cause to the electromagnetic field that surrounds the observable particle. The concept of renormalisation helps readers understand the difficulty and provides Armantrout with conflicting, yet identical, language.

Charles Francis writes that 'Schwinger and Tomonaga used renormalisation in order to treat divergent quantities'. They suggested that the electron is surrounded by an infinite cloud of virtual particles, the idea that Armantrout refers to in the first section, but Francis continues that 'Dirac regarded renormalisation as a "stop-gap procedure…" [because] when you get a number turning out to be infinite that ought to be finite, you should admit that there is something wrong with your equations'.[706] In the second section Armantrout recognises that renormalisation places a 'shell',[707] to use Richard Feynman's terms, over the electron to make its 'interactions consistent with quantum theory…' and so that 'some sense can be made of infinite quantities'.[708] Drawing both ideas together, particles must be 'dressed' because they behave in ways that don't fit the theory, in this case quantum electrodynamics.

Armantrout has repeated the close positioning of children and particles since her 1991 volume *Necromance,* moving from power dynamics in 'Attention' to 'hopeless persistence'

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[704] Fauconnier and Turner, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities,* p. 156.
[705] Matt Strassier, 'Virtual Particles. Not Particles at All', *Of Particular Significance,* 2017. 01.12.2017 (2011), <https://profmattstrassler.com/articles-and-posts/particle-physics-basics/virtual-particles-what-are-they/> [accessed 1 December 2017].
[706] Charles Francis, *Light after Dark Ii: The Large and the Small,* (Leicester: Troubador Publishing Limited, 2016), pp. 150–151.
[707] Francis, p. 151.
[708] G.D. Coughlan, J.E. Dodd, and B.M. Gripaios, *The Ideas of Particle Physics: An Introduction for Scientists*, (Cambridge: Cambridge University Press, 2006), p. 33.

in 'Human' from *Money Shot,* before arriving at the children's game of peek-a-boo in 'Dress Up' from *Just Saying;* common to all three of these poems are overarching ideas of hiding and seeking. In 'Dress Up', the positioning of this game, underneath the scientific theories of virtual particles and renormalisation, makes the link between quantum electrodynamics and a child playing peek-a-boo surprisingly appropriate because of the important cognitive developmental milestones that the game represents. The milestones which evolve from the peek-a-boo phenomena, according to James A. Kleeman, are: 'object relations, mastery, exploration, and reality testing',[709] all of which are essential in the cognitive processing and understanding of Armantrout's HEM. In 'Dress Up' the 'hopeless persistence' or 'petulance of the lost' from the previous 'Human' is replaced by a toddler who 'waits/ until we get the joke', a joke which may well be that the continual search to contain and find answers to an infinitely massive set of questions is as productive as a simple child's game, which in this case does happen to be crucial to successful cognitive development in humans.

These poems clearly show Armantrout's overarching desire to refuse finite structuring, which she feels only limits knowledge and the generation of new ideas. Armantrout's poetic methods suggest that only guidelines, which facilitate objective cycles of structuring, destruction, and restructuring, should be applied. This is one reason why the above diagram and subsequent analysis does not offer a system to resolve Armantrout's HEM, but looks to the creation of an extended target that may be used in subsequent cycles of processing metaphorical relations and conceptual systems. Analysing poetry from *Money Shot* and *Just Saying* helps readers understand how Armantrout's complex network of meaning is created and points towards a way of benefitting from the challenging, but valuable, qualities of Armantrout's poetry, even if they have not followed the development of these networks across poems or volumes. Such a system is necessary because Armantrout's HEM, which evolves under mimetic conditions, enables readers to unpack more and more information from the compression contained in hyper-extended terms, yet, like the interaction of virtual particles meaning, arises only fleetingly. Other problems that arise when applying any cognitive system, one which as earlier observed with Fauconnier is concerned with reducing the 'conceptual complexity of inputs'[710] in order to make problems more scalable, is that it seems to disagree with Armantrout's own poetic manifesto to ask more questions rather than

[709] Anna Freud Ruth S. Eissler, Albert J. Solnit *The Psychoanalytic Study of the Child, Volumes 1-25: Abstracts and Index,* (New Haven / London: Yale University Press, 1975), v. 1-25, (p. 182).
[710] Marcus Callies. p.126 – Discussed in Chapter One, p. 26.

solve them. Though systems provide a dressing for metaphorical problems, much like the act of dressing particles, there are times when Armantrout's HEM does not rest easily with any theory, in part due to her use of scientific expression, which is for many readers and for Armantrout to some extent, a foreign language. Armantrout's HEM is inextricably linked with repetition and variation and how the evolution, which results from this process, shapes the language we use and the understanding of ourselves, either as individuals or as part of a larger system of particles and anti-particles, a concept which resists classification as the jelly fish does in her poem 'Colony'.

Armantrout has stated in interviews and repeated poetic exploration that she is interested in ideas of multiplicitous entities or Badiou's 'count-as-one'[711] theory. Finding methods to interpret Armantrout's metaphor gives readers one way into a complicated and often disconnected, but rewarding, poetics; however, considering Armantrout's clear preoccupation with how language constructs and destabilises identity, attention should be given to her use of science as a language largely foreign to her. The languages of science and poetry are continually evolving systems of knowledge, in part shaped by the language patterns of the individuals who speak with it and the historical and cultural developments peculiar to the individual fields. Armantrout's use of HEM forces readers to create connections between the languages of science and poetry essentially creating a third poetic 'interlanguage'.[712] Armantrout's creation of an interlanguage creates new ways of speaking, which is of pressing concern to Armantrout and, considering Sapir's arguments,[713] may well be for readers who find that the language habits of their communities are now repositioned by the nature of experience in an Internet driven society. Armantrout's HEM enacts Chandler's earlier observation that '*reform*ulating something trans*forms* the ways in which meanings can be made'.[714] HEM in Armantrout reforms the target of a metaphor, to acknowledge the importance of different truth claims and the simultaneity of experience. In order to continue this evolution, a new language must be created in order to bridge the gaps that this method creates.

Interlanguage is a term coined by Larry Selinker in his account of second language acquisition and relates to a language which falls in a space between the first and target

[711] Alain Badiou and Oliver Trans. Feltham, *Being and Event,* (New York: Bloomsbury Academic, 2007).
[712] Ellis, pp. 350–352.
[713] See pp. 3–4.
[714] Chandler.

language. In Armantrout's poetry, the first language of poetry acts as the source; this is then mixed with the second target language, science, to create something new. 'When learning a second (target) language the learners build an individual language system different from their first language'.[715] The following chapter will consider the ideas of interlanguage in parallel to the poetry in Armantrout's volume *Itself.* Armantrout's poetry displaces the language and the visions of science activating foreign associations and language. The subsequent poetry is susceptible to difficulties in the form of overgeneralisations, omissions, and transfer errors, problems which are then passed on to readers. Interlanguage offers a way to approach the difficulties uncovered by Armantrout's use of HEM and recognises, as Armantrout's poetry does, that language is permeable, subject to external influence, and shaped by learner conscious attempts to control it.

[715] Ellis, pp. 350–352.

Chapter Five:

Interlanguage: Poetry Speaking in Science

If I didn't need
to do anything,
would I?

Would I oscillate
in two
or three dimensions?

Would I summon
a beholder

and change chirality
for "him?"

A massless particle
passes through the void
with no resistance.

Ask what it means
to pass through the void.

Ask how it differs
from not passing.

'Chirality'

> 'I like the idea that we can make new, provisional entities out of whatever the world throws at us. I think that's how we create our personalities—and it's how I write poems.'[716]

In 'Chirality', 'oscillating' in different 'dimensions' becomes a fundamental aspect of existence; the first two questions are rhetorical. Like the movement of the 'massless particles' the poetic journey is a journey of interaction with the environment, an environment

[716] Fitzgerald.

we are chiral to—not identical to, but one with which we share features. The last four lines of 'Chirality' are an appeal: our lived experiences, our words, our visions, should 'oscillate', should pass through the void creating new interaction and meaning; yet Armantrout doesn't tell us precisely who to ask because that *who* only arises from the 'oscillation'. Adam Fitzgerald writes that Armantrout uses different 'textures' in her poetry, noting her sustained interest in science, particularly physics, saying she 'yok[es] incongruous bits together'.[717] This chapter argues that *Itself* goes much further than Armantrout's previous interlacing of divergent language and ideas which critics, reviewers, and even Armantrout herself, have referred to using labels such as: 'yoking together', 'collage', 'faux collage',[718] and 'juxtapositions'.[719] *Itself* develops previous scientific visions, manipulating the language to include new ideas with the same consistency, demonstrating Armantrout's ability to engage with scientific vision and language in the creation of a new interlanguage. The poems in *Itself* are not weakly interacting juxtapositions and collages, but languages that give substance to each other as they 'oscillate /in two/or three dimensions' at once. The previous chapter attempted to point towards ways for readers to derive a loose structure and so benefit from Armantrout's continual cycle of question and revision. One of the reasons that a resolution of method remains elusive is her use of scientific theory and expression. This use forces readers to create associations, but its status as a largely foreign language simultaneously creates and closes conceptual gaps. This chapter turns to Interlanguage to find a way of addressing these problems.

As I have shown, contemporary poets draw on linguistic systems that have evolved over centuries using practices and words that carry specific historical and poetic associations. Previously, this thesis has argued that the 'language habits of our community predispose certain choices of interpretation'[720] so the words we use influence the way we think and interpret; they can be viewed as evolvable memes, which 'have clear histories of descent with modification of both pronunciation and meaning that can be traced back thousands of years in many cases'.[721] The linguistic system of poetry is a unique language, learned and practised

[717] Fitzgerald.
[718] Casper.
[719] Kristina Marie, '*Next Life* Reviewed by Kristina Marie', *Jacket 2*, jacket 35 (2008), 4 <http://jacketmagazine.com/35/r-armantrout-rb-darling.shtml> [accessed 1 August 2017]
[720] Abram, p. 91.
[721] Dennett, p. 177.

over time, with the task of never fully comprehending the 'associational weights'[722] of words developed over 'thousands of years' from a speaker's native language—in this case Armantrout's use of the poetic form is impossible. Likewise, the inclusion of scientific language and visions must be subject to the same type of problems faced when speakers undertake to learn a second language. This is particularly relevant when this language is largely foreign, like the language of science is to Armantrout who doesn't profess native ability, but refers to herself as an 'amateur enthusiast'.[723] In the face of these difficulties, the concept of interlanguage offers a way to gain valuable insights and understandings into the expression of scientific language and visions in Armantrout's poetry, a poetics which is further complicated by what Aisha Bhoori claims is her inability to 'separate distrust of self from distrust of language',[724] an idea entrenched in the poetry by this point founded in Armantrout's early and consistent mistrust of metaphor.

The first poem of *Itself*, 'Chirality', provides a summation of Armantrout's poetic journey thus far. The ideas it contains returns readers to 'Extremities',[725] the first poem in Armantrout's first book of poetry of the same name, which was discussed in Chapter Two:

> Going to the Desert
> is the old term
>
> 'landscape of zeros'
> the glitter of edges
>
> again catches the eye
> to approach these swords!
>
> lines across which
> beings vanish / flare
>
> the charmed verges of presence

Bhoori claims this return is indicated by the title and the famous example of chiral objects—hands or extremities—but other definitions of the word extremities relating to borders and

[722] H. ed. East, p. xxxii.
[723] Fitzgerald.
[724] Bhoori.
[725] Armantrout, 'Extremities', in *Extremities,* p. 1.

edges drives understanding of the poetry even further, as Armantrout 'oscillates' the borders of her past and present poetic journey to the 'dimension' of scientific language. Armantrout says she is 'drawn to edges, borders, say between being and non-being life and the inanimate, continuing and going on or, as I wrote in the opening poem of my first book, *Extremities:* "The glitter of edges / again catches the eye / to approach these swords!"'.[726] The title 'Chirality' reveals that this poem is not identical to the reflection of 'Extremities' that we find in it, though it shares some essential relations. It does not only appear to be, as Bhoori claims, an 'interrogat[ion of] the asymmetry of the devoured "she" and abandoned "I"'[727] found in Armantrout's first volume of poetry, but also a more fundamental journey through questions of consciousness that began in 'Extremities' to questions of existence itself. These further questions are brought to the fore by the discovery of the Higgs boson particles, which as Armantrout writes are part of the inspiration for several poems in *Itself,* including 'Chirality': 'several poems in the book were partly inspired by a book by physicist Brian Cox called *The Quantum Universe* ... and the movie about the discovery of the Higgs boson'.[728] The return in 'Chirality' is related to 'Extremities' and consciousness; it revisits Armantrout's desire to 'ground abstract physics in human psychology'. However, in this repetition the quantum vacuum, where 'supposedly virtual particles and their mirror-image anti particles constantly pop into existence and then annihilate one another',[729] becomes a metaphor for language; an idea significantly evolved from one of its first inclusions in 'Back'[730] from *Up to Speed,* in which Armantrout uses a 'grotesque metaphor' for the continual cycle of existence and annihilation as it relates to 'Living beings'[731]:

> The teacher said
> two mirror images
> Could come into being
> by borrowing
>
> from zero—but only
> if they agreed
>
> to cancel one another out.

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[726] Fitzgerald.
[727] Bhoori.
[728] Harriet Staff, 'Talking with Rae Armantrout About Itself', *Poetry Foundation,* (2015), <http://lithub.com/the-poetry-collider/> [accessed 1 December 2017].
[729] Armantrout and Press, p. 77.
[730] Armantrout, 'Back', in *Up to Speed*, p. 68.
[731] Armantrout and Press, p. 79.

We followed
from inert matter
by offering
to eat each other up.

*
What sort of place is
existence
since we can "come into" it?

A point coincides;
it has no dimension.

Some say
matter's really energy

and energy is force
of law

and law is just
tautology.
*
We were taught
to have faces

by a face
looking "back"

'Back' remains an important influence in *Itself* as Armantrout hyper-extends many of the metaphors and visions it contains, representing the action of 'looking back' or returning to previous poems in the volume in order to revisit the Hegelian paradoxes and questions of self and existence in light of new information; information which comes in the form of scientific discovery and personal experiences. For example, in the poem 'Chirality' the background has been forced to evolve further because of confirmation, through scientific investigation rather than only predictive theory, that the Higgs boson most likely does exist, which means existence *is* a place we can 'pop into' or "come into". It is the symmetry and asymmetry in 'Chirality' which now provides the questions for Armantrout—what features of language and therefore consciousness remains constant, and what is it about these things that changes when they are subjected to transformative and unavoidable interactions? In *Itself,* Armantrout focuses heavily on words and language consciously examining the role her own poetry has to

play and asks questions about meanings borrowed from her own and other's poetry, as well as from science. The book is rich with questions about how language 'itself' may or may not point toward meanings; at times words are 'massless particle[s]' and Armantrout reaches beyond the border of poetic language, 'oscillating' towards scientific language, in an attempt to develop a new way of speaking, which is not limited by borders, 'edges' or 'dimensions' as it attempts to pass 'through the void' between science and poetry.

The concept of interlanguage offers an appropriate structure on which to position poetic interpretations for poetry that forces readers to interpret *and* translate the different languages in the poems. Language, Armantrout has been telling readers, at least since her poem 'Translation' from *Versed,* is 'the thing that makes us human';[732] an idea questioned again in *Itself* by returning to Armantrout's exploration of the Eliotian idea in this poem, that 'the progress of the artist is a continual extinction of personality',[733] and personality in Armantrout is akin to self, the difference in *Itself* is that the 'continual extinction' is of words and meanings. Readers face incredible difficulty in carrying out interpretations and translations of Armantrout's poetry some of which arise from the impossibility, stated by Armantrout, of divorcing language 'from thought, words from their histories',[734] an idea which in *Itself* is now symbiotically bound to self. T.S. Eliot's assertion that poetry should not be about the individual life and experience of the poet, but of the poet's respect, synthesis and 'modification' of the traditions that have gone before,[735] can also be carried forward, because in Armantrout's poetry words and histories arise from poetic and scientific traditions so that translations and interpretations occur across at least two languages instead of one. Armantrout's poetry displaces the language and visions of science. This deliberate movement activates foreign associations and language, meaning the resulting poetry is susceptible to difficulties because it 'oscillates' in different dimensions. These difficulties occur at both a conceptual and structural level as scientific visions are simplified, manipulated and overgeneralised. Structurally, the language of science that provided Armantrout with her visions is evident in the characteristics and register of her poetry, such transferrals relating to language, and concepts must then be navigated by readers.

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[732] Armantrout, 'Translation', in *Versed,* p. 64.
[733] Eliot, *The Sacred Wood and Major Early Essays,* p. 53.
[734] Armantrout and Press, p. 13.
[735] Eliot, *The Sacred Wood and Major Early Essays,* p. 125.

5.1 Interlanguage

The term interlanguage was coined by American linguist Larry Selinker in his 1972 account of second language acquisition and relates to a speaker created linguistic system, yet 'although the term seems to imply, it is not a kind of language somewhere between the first and second language with structural features from both, but rather an intermediate system characterised by features resulting from language-learning strategies'.[736] The idea that an interlanguage creates a new system is particularly useful in the analysis of Armantrout's poetry, using scientific and poetic visions to create a third form with its own set of rules. Cognitive language learning strategies as identified by interlanguage are also useful, in light of Armantrout's use of HEM, because of their relation to making associations between known information and their application of repetition. According to Rebecca Oxford, cognitive language learning strategies 'enable the learner to manipulate the language material in direct ways, for example, through reasoning, analysis, note-taking, summarising, synthesising, outlining, [and] reorganising information to develop stronger schemas'.[737] Silvina Montrul writes that many of these features were 'laid out by Selinker in 1972 [and] remain central to the generative theory applied to second language acquisition'.[738] Cognitive language learning strategies, along with the principles of Interlanguage, play an important role in gaining understanding into Armantrout's appropriation of scientific language and vision. In Armantrout's poetry, the first or native language is poetry which acts as the source; the second target, being the foreign language, is science mixed with the first language to create a new system. This results in a system which has features of both languages but is likewise distinct from them, as Rod Ellis writes: 'when learning a second (target) language the learners build an individual language system different from the their first language'.[739] This new linguistic system is created by certain psycholinguistic processes which Selinker identifies as: '(a) native language transfer, (b) overgeneralisation of target language rules, (c) transfer of training, (d) strategies of communication, and (e) strategies of learning'.[740] For Armantrout, the creation of an Interlanguage is a necessity and she uses the knowledge and

[736] Pieter Muysken René Appel, *Language Contact and Bilingualism*, (Amsterdam: Amsterdam University Press, 2006), p. 83.
[737] Rebecca L Oxford, *Language Learning Styles and Strategies*, (Berlin / New York: Mouton de Gruyter, 2003), p. 12.
[738] Elaine Tarone ZhaoHong Han, *Interlanguage: Forty Years Later*, (Amsterdam / Philadelphia: John Benjamins Publishing Company, 2014), p. 77.
[739] Ellis, pp. 350–352.
[740] Margie. Berns, *Concise Encyclopedia of Applied Linguistics*, (Philadelphia: Elsevier Science, 2010), p. 135.

symbols that arise from a lived experience, defined in part by the visions of science, to create 'new entities' and tells readers that this is how she creates both her poetry and her 'personality'. The Interlanguage that Armantrout creates is consistent; visions are examined and developed rigorously to create poetry which has 'an architecture of its own', by Ralph Waldo Emerson's standards, except that instead of 'adorn[ing] nature with a new thing'[741] Armantrout's poetry attempts to adorn the self with something new as it 'pass[es] through the void'.

Interlanguage is connected to both the native and target languages by psycholinguistic processes and one of the most useful of these for the analysis of Armantrout's poetry is the process of native language transfer or 'interlingual identifications', a term adopted by Selinker following the work of Uriel Weinreich.[742] These interlingual identifications occur 'in the perception of the learner',[743] and cohere with Armantrout's hyper-extended metaphor. They refer, according to Selinker, to features learners 'identify as the same across linguistic systems'.[744] Similarity and the resulting repetition is an essential attribute in the progression of Armantrout's hyper-extended metaphors, with both neutral and positive features being carried forward in the creation of a new metaphor target. In Interlanguage the learner perceives these identifications as the same in both systems. In making identifications 'second language learners typically 'stretch' linguistic units by perceiving them as the same in meaning across three systems',[745] being the source language, the target language and the new interlanguage. The difficulty for poetic interpretation is that it doesn't follow that they will be replicated by other native speakers of either language, because of their relation to perception. In Interlanguage the new system does not rapidly progress but 'slowly revises interim systems to adapt new hypotheses to the target language', with changes occurring in one particular context initially, before 'gradually extend[ing] over a range of linguistic contexts'.[746] This characteristic of Interlanguage lends itself persuasively to the poetry of Armantrout, who writes several years earlier in 'Results' from *Versed* that she has 'developed

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[741] Ralph. Waldo Emerson, *Ralph Waldo Emerson: Selected Essays, Lectures and Poems*, (New York: Random House Publishing Group, 2006), p. 211.
[742] Uriel Weinreich, *Languages in Contact, Findings and Problems*, (New York: Linguistic Circle of New York, 1953).
[743] E.K. Brown, R.E. Asher, and J.M.Y. Simpson, *Encyclopedia of Language & Linguistics*, (Philadelphia: Elsevier, 2006), v. 1, p. 747.
[744] William E. Rutherford Larry Selinker, *Rediscovering Interlanguage*, (New York: Taylor & Francis, 2013), p. 40.
[745] Berns, p. 136.
[746] Lichao Song, *On the Variability of Interlanguage*, (2012), p. 778.

the ability/ to revise what [she's] waiting for/ so that the letter/ becomes dinner/gradually'.[747] This raises questions about what happens to how a language system processes meaning, when rules are applied equally across, what are at times, semantically and syntactically opposed systems of usage. Armantrout's continual evolution of HEM shares a likeness with the high permeability of an Interlanguage 'in the sense that rules that constitute the learners' knowledge at any stage are not fixed but open to amendment'.[748] Armantrout's use of HEM continually evolves systems of meaning to provide amended and extended metaphor targets; Interlanguage offers an established theory that suggests ways of interpreting the larger system of Armantrout's poetry.

A feature of Interlanguage, valuable in the consideration of scientific language in Armantrout's poetry, is fossilisation. This concept has been subject to numerous definitions in the study of interlanguage, yet most interpretations have retained some basis in Selinker's original arguments, particularly those that relate to: 'the regular reappearance or re-emergence in Interlanguage productive performance of linguistic structures, which were thought to be eradicated'.[749] In other words, learners often retain linguistic features from their native language in their Interlanguage relative to a particular target language. Selinker's fossilisation is an observable linguistic phenomenon, but conceptually Emerson's much cited statement 'language is fossil poetry' helps readers understand what happens to linguistic and scientific phenomenon when they are transferred to poetry. Emerson writes that the poet is a 'language-maker, naming things sometimes after their appearance, sometimes after their essence' and that 'language is made up of images, or tropes, which now in their secondary use, have long ceased to remind us of their poetic origin'.[750] The poetry in *Itself* transfers the linguistic features and symbols from previous poetry and re-examines them relative to the language and visions of science Armantrout engages with. Zhaohong Han writes fossilisation is 'both a cognitive mechanism and a structural-behavioural phenomenon'.[751] The underlying cognitive processes at work in Armantrout's continued HEM, along with her use of scientific language, provides evidence for conceptual and linguistic fossilisation in the poetry. In a poetic interpretation, this chapter will adapt features of Interlanguage in order to suggest that

[747] Armantrout, 'Results', in *Versed,* p. 4.
[748] Song, p. 778.
[749] C.J. Doughty and M.H. Long, *The Handbook of Second Language Acquisition*, (Wiley, 2008), p. 488.
[750] Emerson, p. 217.
[751] Zhaohong Han, *Fossilization in Adult Second Language Acquisition*, (Clevedon: Multilingual Matters, 2004), p. 16.

Armantrout's use of both poetic and scientific language creates an individual Poetic Interlanguage, hereafter PIL. In this case, PIL regards poetry as the native language of Armantrout and the language of science as the second target language. To identify instances of PIL, I will examine examples of interlingual identifications: features of scientific and poetic language that Armantrout expresses as the same or similar, and identify instances where the linguistic and stylistic features of her poetry indicate the formation of a PIL. Defining certain characteristics of scientific language helps to show how this may have modified Armantrout's poetic style, and characteristics of poetic language will be discussed alongside the interpretations of poems from *Itself.*

5.2 Scientific Language

In trying to understand some of the differences between scientific and poetic language it is helpful to borrow from the aims and structures of English for specific purposes, (ESP). ESP focuses on the underlying purposes of the field—in this case it would be the communication objectives of scientific discourse or English for science and technology, (EST): it examines the physical or surface structures of a text, for example, lexis, discourse, and grammar, to provide an objective approach to interpretation. In addition, its relatively recent shift towards 'the thinking processes that underlie language use' and its concern with 'how meaning is produced',[752] along with its role in teaching foreign languages to adult learners, make it a highly relevant way of dealing with Interlanguage in light of Armantrout's HEM. A brief summary of some of the key theoretical positions in the ESP approach is beneficial, before assessing the differences between scientific and poetic language, to help identify recognisable features of scientific language.

5.3 Register Analysis

Register analysis was the precursor to an approach that gave more focus to stylistic features and learner centred approaches to language leaning. The study by J.R. Ewer and G. Latorre '*Preparing an English Course for Students of Science*'[753] remains an influential contribution

[752] Alan Waters Tom Hutchinson, *English for Specific Purposes*, (Cambridge: Cambridge University Press, 1987), p. 13.
[753] J. R. Ewer and G. Latorre, 'Preparing an English Course for Students of Science', *ELT Journal,* XXI. 3 (1967), 221–29.

to the field of ESP, and the arguments which arose found that: 'the great variety of writing in scientific English had not been fully realised, nor the fact that these different sub-registers tended to use distinct structures'.[754] It was due to this variety and the subsequent complexity in lexicon and syntax that many scholars, including Pauline Robinson and Peter Strevens,[755] found it was not viable to use register as the main basis for selection, because 'there is no significant way in which the language of science differs from any other kind of language'.[756] This is not to say the two languages are the same, but that the variety and complexity of scientific writing precludes a style, which can be confidently differentiated from others. Pauline Robinson argues 'that there is broad agreement that scientific English is general English plus the extra components of science'.[757] This idea has received wide-ranging support and more recently scholars, including Tatjana Rusko, have argued that the lexical structure of scientific terminology partially leads the linguistic system: 'the general scientific lexis is fully manifested in its interrelation with terminology'.[758] These kinds of conclusions were important in the historical development of ESP and help demonstrate why more learner centred approaches were necessary, leading towards Streven's argument that the difference between scientific language and other language relates to style: 'It is not the basic components of his language that differ, it is the statistical properties of the mixture in which they occur, and the intention, the purpose, behind their selection and use'.[759] These arguments helped shift focus to how sentences were used together to create meaning.

5.4 Stylistic Features of Scientific English

In the absence of a specific register of science, stylistic features can be used in an attempt to find useful ways of characterising the differences between scientific and poetic language and therefore find evidence of Armantrout's creation of PIL. According to Strevens, some of these features are:

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[754] Ewer and Latorre, p. 224.
[755]See: Pauline C. Robinson, *Esp (English for Specific Purposes): The Present Position*, (New York: Prentice Hall, 1980). and Peter Strevens, 'Special-Purpose Language Learning: A Perspective', *Language Teaching & Linguistics: Abstracts*, 10. 3 (2008), 145–63.
[756] Bernard Coffey, 'Esp – English for Specific Purposes', *Language Teaching*, 17. 1 (2008), 2–16 (p. 4–5).
[757] Imola Katalin Nagy, *English for Special Purposes: Specialized Languages and Problems of Terminology*, (2015), p. 270.
[758] Tatjana Rusko, *Lexical Features of Scientific Discourse*, (2014), p. 85.
[759] Strevens, p. 153.

(i) *rather long sentences* containing many clauses, often in complex degrees of dependency and with much embedding;
(ii) *long nominal groups* containing strings of adjectives or nouns acting as adjectives, each providing the greater specificity that comes from modification upon modification, and
(iii) *frequent passives* which have the effect of putting important ideas in initial positions where in English they carry salience of meaning.[760]

This list shares similarities with an earlier set of groupings from Ewer, which included many of the above items he considered essential to 'basic scientific English'[761] and therefore should be stressed in teaching materials:

'Group I: Items essential to basic scientific English:

-ing forms replacing a relative
Infinitive as substitute for longer phrases

Words similar in form but with different meanings for the same function

Most prefixes and suffixes
Most structural and qualifying words and phrases.

Group II: Items essential to basic scientific English:

Compound nouns
Passives

Conditionals
Anomalous finites
Cause-and-result constructions

Words similar in form but with different functions
Past participle usage
The prepositional (two-part) verbs common in scientific English.'[762]

[760] Strevens, p. 154.
[761] J. R. Ewer and G. Hughes-Davies, 'Further Notes on Developing an English Programme for Students of Science and Technology (1)', *ELT Journal,* XXVI. 1 (1971), 65–70, (p. 67).
[762] Ewer and Hughes-Davies, p. 67.

The recognition of these features as specific to scientific language has remained constant across subsequent studies along with others, such as H.G. Widdowson's work, which emphasised the action of depersonalisation in scientific language: 'It is important to recognise that the 'depersonalised' statement of the scientist represents a way of referring to phenomena in a 'non-ordinary' manner, which is as much an essential part of science as is the 'subject matter' of pressure, mass, force, energy, specific gravity, chemical reactions, and so on'.[763] Widdowson's study was one of many that began looking at the underlying communicative purpose of the language, or discourse analysis, and has contributed to a more cognitive approach to ESP. As Tom Hutchinson and Alan Waters write: 'we need to distinguish … between what people actually do with the language and the range of knowledge and abilities which enables them to do it'.[764]

Features of scientific language, such as the 'interrelation of terminology' and characteristics of style, as identified by Strevens and Ewer, along with examples of depersonalisation, will be used alongside interlingual identifications to provide evidence for Armantrout's creation of a PIL. These markers demonstrate that Armantrout's poetry is deliberately manipulating language as a way of shifting ideas reciprocally between scientific and poetic visions of the world. This action creates an overarching process that fits with cognitive definitions of metaphor which have consistently, since George Lakoff and Mark Johnson, related to the action of 'understanding and experiencing one kind of thing in terms of another'.[765] For example, Lakoff and Johnson use the metaphor ARGUMENT IS WAR to show how understandings of the abstract concept of argument are structured. Arguments and war are 'different types of things' in the same way that science and poetry understand the world in different ways, but one can be 'partially structured, understood, performed and talked about in terms'[766] of another. Armantrout uses features of scientific and poetic vision to 'pass through the void'[767] between these two different methods of gaining knowledge about the world in her creation of a PIL. In her 'oscillation' between her past and present poetry, Armantrout develops her previous method of using science and poetic vision concurrently to

[763] Henry G. Widdowson, 'Literary and Scientific Uses of English', *ELT Journal,* XXVIII. 4 (1974), 282-92. (p. 289).
[764] Tom Hutchinson, p. 18.
[765] Lakoff and Johnson, p. 5.
[766] Lakoff and Johnson, p. 5.
[767] Armantrout, 'Chirality', in *Itself,* p. 3.

navigate the 'gaps, chinks, hinges [and] holes … of life'.[768] Her creation of PIL uses HEM and scientific expression to activate the same cognitive processes that work in the processing of a conceptual metaphor. As the PIL develops it undergoes a similar process of creation, destruction, and repetition, and attempts to compress concepts and language into a more manageable scale. Finding instances of interlingual identifications, including fossilisation, becomes easier in *Itself* due to Armantrout's style, which often provides moments of scientific vision and poetic vision in separate sections, making interlingual identifiers and fossilisation more prominent.

5.5 Poetic Interlanguage in *Itself*

> 'I want to "capture" something, some experience, but I also feel that the idea that words can capture things is silly. I want to invoke my complicity in human vanity and silliness as well as to show my real appreciation … There's always some tension between these two impulses.'[769]

Itself questions what in the world can be described by words, and what knowledge can be caught and presented by them. *Itself* finds language 'comic[al]',[770] full of 'sweetness',[771] elusive and deceptive. The book is divided into three sections *Itself*, *Membrane,* and *Live Through*. These sections loosely track the development of Armantrout's poetic journey, with the final section looking at emerging ideas, before ending with the poem 'New Way'. As foreshadowed in the title poem 'Chirality', the book repeatedly examines ideas of similarity, difference and the border between self and others, and many of these instances are closely tied to different theories of language. The poetry attempts to traverse across the borders between language and consciousness, while remaining aware of the 'membrane' that separates them. Armantrout is clear that particle physics heavily influenced a number of poems in *Itself,* saying that Brian Cox's book and the discovery of what could eventually be confirmed as a Higgs boson 'really got [her] going for a while'.[772] *Itself* requires readers to find new meaning in scientific inclusions, and to transpose them and create meaning; as the

[768] McLeish, p. vi.
[769] Michalski.
[770] Staff.
[771] 'Itself', p. 17.
[772] Staff.

poem 'Head' indicates, readers need to 'convert/ proton[s] to neutron[s]'. This conversion causes a distortion of language and meaning akin to the beta decay the poem is referencing. Prior scientific knowledge, particularly an in-depth understanding of complex theories, is not what Armantrout expects from her readers, but rather it is the action of searching for and creating connections that she wishes them to undertake. In order for readers to understand the action that Armantrout takes in the creation of a PIL, it is helpful to dissect the scientific and poetic elements of her work. For this reason, a brief non-technical summary of some of the relevant scientific theories will be useful.

5.6 Particle Physics and Poetic Interlanguage in *Itself*

The search for the elusive Higgs boson[773] is driven by the desire to prove that the predictions of the standard model[774] relating to the existence of a Higgs field are correct. The Higgs field is an invisible field that permeates everything around us and everything moves through it all the time. Descriptions of the Higgs field might sound abstract, but according to science the theory is hugely significant to our lives, partly because it's 'a generic term used for any background quantum field added to field theory to trigger symmetry-breaking through the Higgs mechanism',[775] but more importantly, because without it, according to everything we know so far, the universe would not exist at all. It is commonly written that the Higgs field "gives" mass to elementary particles—particles that cannot be split or divided into further component parts—and these particles are generally regarded as the building blocks of the universe; although the Higgs field doesn't actually give mass it does create a type of drag on the particle as it moves through the field. According to the standard model there are two types

[773] An elementary particle according to the standard model, which unifies the weak and electromagnetic interactions. The standard model also suggests that the Higgs field is made up of countless individual Higgs bosons.

[774] 'In the late 1970s elementary particle physicists began speaking of the "standard model" as *the* basic theory of matter… The model is referred to as "standard", because it provides a theory of fundamental constituents – an ontological basis for the structure and behaviour of all forms of matter (gravitation excepted) including atoms, nuclei, strange particles and so on.' See: Laurie Brown Lillian Hoddeson, Michael Riordan, *The Rise of the Standard Model: A History of Particle Physics from 1964 to 1979*, (Cambridge: Cambridge University Press, 1997), p. 3.

[775] Jim Baggott J. E. Baggott, *Mass: The Quest to Understand Matter from Greek Atoms to Quantum Fields*, (Oxford: Oxford University Press, 2017), p. 302.

of elementary or fundamental particles:[776] fermions, which make up matter, and bosons, which carry forces. Scientists often attempt to understand particles by measuring their properties, for example mass, but before the standard model there was no explanation as to how the mass of a particle arose or why. The Higgs field proposes that as particles pass through the field, they interact with it and gain mass; the greater the interaction, the greater the mass. It can be considered as a ball moving through a body of water with water representing the Higgs field and the ball, a particle; as the ball moves through the water the water creates a drag on it and "gives" the ball its mass. Higgs bosons are created via an excitation of the Higgs field so, in order to look for a Higgs boson, the particle that seems to fascinate Armantrout, the ball would have to be dropped onto the water with some force. The boson would be found not in the droplets of water that resulted from this collision, but in the action of the splash itself. Finding the Higgs Boson, which scientists at Cern have now tentatively done,[777] a discovery which inspired Armantrout through the film *Particle Fever,*[778] lends weight to the existence of the Higgs field. The problem is that Higgs bosons are extremely difficult to create or detect and equally hard to measure because they break down into lighter particles, such as photons, very quickly. So, scientists try and look for Higgs bosons in the measurements of the splash before it vanishes almost instantaneously, or in the fast decay of the Higgs boson.

In the poem 'Split', from the first section of the book, Armantrout takes the ideas of particle physics and applies them to her own experience by 'splitting' them into component parts:

> Because you dodge
> yourselves
> by branching,
>
> (expelling particles
> of light).
> Because you split
> no-difference,

[776] The terms elementary or fundamental can be interchangeable and confusing, as pre-1967 protons and neutrons (particles that make up the nucleus of an atom) were considered indivisible particles, until the discovery that they were made up of quarks, 'key evidence for their existence came from a series of inelastic electron-nucleon scattering experiments conducted between 1967 and 1973 at the Stanford Linear Accelerator Centre'. See: Michael Riordan, 'The Discovery of Quarks', *Science*, 256. 5061 (1992), 1287–93.
[777] J. E. Baggott, p. 302.
[778] Fitzgerald.

Sights strike me
as

~
A muscular grey cat
trots

along the top of
the cinderblock wall

separating my couch
from the supermarket.

~
25% say, “That’s
just it, Pam!”

~
I take these
white streaks

of truck

glimpsed
between branches

to be blossoms.

Armantrout’s use of science as a type of second language learning provides another layer of interpretation, which is vital when attempting to understand difficult poetry that pushes the boundaries of how we understand and use metaphor and language. In order to recognise the value Interlanguage adds to poetic vision, I will provide an overall interpretation in the first instance. In ‘Split’ the overlap between science and poetry means readers are thinking in more than one ‘dimension’ and this helps give the poem and the words multiple meanings, a device that has become an indispensable part of Armantrout’s poetry. There can be no doubt of Armantrout’s desire to explore the nature of language ‘itself’ and how it tries and fails to ‘capture things’, things like the ‘self’, something we take for ‘granted that we kn[o]w what a

self is and that this self could be ascribed to a wide variety of objects'.[779] In 'Split', Armantrout refuses to take anything given to us in the language of science *or* poetry for granted.

The first section of the poem is the section most obviously related to science, though this simple association is misleading, as it introduces ideas which are simultaneously explored by poetic and scientific vision throughout the poem. This section presents scientific theory in a confirmatory style, using concrete language that instructs rather than suggests the action to the reader, 'you dodge / you split' with an authoritative tone that allows readers to merge the language of science and poetry along with Armantrout. The first section appears to relate to particle decay with the words 'branching',[780] 'expelling', and 'particles'. The relation of this to the Higgs boson, with the words 'dodge' and 'particles of light', becomes clearer when we know that one of the more certain properties of the Higgs boson is that its decay mode produces two photons,[781] which is how scientists look for the Higgs boson; these photons do not interact with the Higgs field because they are massless particles. Once the phrase 'particles of light' has made this reference clearer the word 'dodge' takes on a role as an indicator for the Large Hadron Collider (LHC), 'the world's highest-energy particle collider designed to produce proton-proton collision', which attempts to get around particle 'dodging'. At the same time, it introduces an element of surprise and uncertainty in its definitory understanding of avoiding and evading, particularly in relation to 'your*selves*' [emphasis mine]. This is a Hegelian idea, which emerged clearly in 'Back',[782] and one which continues because she hasn't 'quite exhausted'[783] it yet. Another key interpretation for the separation and avoidance of 'selves' caused by 'branching', relates to a potential disjuncture of understanding caused by the different authority claims made between diverse branches of knowledge. Uncertainty is increased with its unexpected positioning amidst the language of scientific theory. Towards the end of the first section Armantrout inverts the idiom 'split the

[779] Fitzgerald.
[780] 'The branching ratio of a decay process is the number of particles which decay via a specific decay mode with respect to the total number of particles which decay via all decay modes'. See: Ricardo Amils Muriel Gargaud, Henderson James Cleaves, *Encyclopedia of Astrobiology*, (Springer, 2011), v. 1. p. 218.
[781] Melnikov and Vainshtein revisit this theory following previous challenges to it. See: Kirill Melnikov and Arkady Vainshtein, 'Higgs Boson Decay to Two Photons and Dispersion Relations', *Physical Review D*, 93. 5 (2016), 053015.
[782] See page 5.
[783] Fitzgerald.

difference',[784] because in this case the boson or particle splits 'no-difference', alluding to the specific 'signature' that the Higgs boson leaves via its decay mode and to the uncompromising and objective goals of scientific theory. The section ends by introducing the equally forceful visions 'sights strike me' that enter the rest of the poem, which begins the journey towards answering the question of how readers can begin to process the language and visions of science when they don't, as is often the case, speak its language fluently.

In the second section, readers are given a moment of daily experience in the focus of a relatively small moment of a cat walking across a wall and across a line of vision. The use of the word 'muscular' calls attention to the cat's anatomical system, and the cat 'trots' on the dividing structure of the 'cinderblock' wall separating a private individual space from a more public multitudinous one; it is a living being or a self not included in either a personal or a public space as it moves along the solid border between them. This is followed by a short third section, which employs another idiom '"That's just it!"'. Idioms typically invert or change meaning through specific combinations of words 'whose meaning is different from the meaning of each word considered separately'.[785] This means the underlying idea forces readers to consider the preceding section differently, partly because of the way we unconsciously process the phrase and partly due to the meaning of the idiom: a confirmatory phrase for whatever information has been previously exposed and that loosely translated could be read as 'that's just what the problem is'. Both the second and third section employ linguistic features more readily associated with the language of science and technology.

The final section presents a more lyrical vision with its complication of time and motion, though it should be noted that this is relative to what has gone before, as the combination of words is at once surprising and beautiful in its unusual merging of 'trucks' and 'blossoms'. This image combines a moment of private thought with the view of a busy road and encourages readers to remain sceptical with its inclusion of the phrase 'I take'; a phrase that could be deemed as either a deliberate or accidental mis-construal of vision, because readers are unaware of if or when it becomes clear that the 'blossoms' are in fact 'trucks'. This poses questions around whether what we see is related to what we desire to see, rather than what is actually in front of us. The final section seems to provide a moment of relief with greater

[784] To meet halfway or 'accept only part of what was original wanted' See: Paul Heacock, *Cambridge Dictionary of American Idioms*, (Cambridge: Cambridge University Press, 2003), p. 93.
[785] Heacock, p. xi.

cohesion in poetic language and meaning, but the relief is short-lived because it remains circular, returning readers to the 'branches' or 'branching' systems of the first section and thereby linking the gaps left by vanishing 'particles' or 'trucks'. It is in this vanishing, like in the vanishing of the Higgs boson, that we are to look for answers around whether we deliberately deceive ourselves through our visions of the world, or whether our vision is obstructed in other ways.

In 'Split', Armantrout's creation of a PIL is apparent from the first section, which makes early reference to Higgs bosons and their decay processes referencing and engaging with the scientific theory behind our understanding of these particles. This scientific vision is displaced from its own language by removing more typically scientific terminology—photons become 'particles of light' and 'branching' represents the moment that Higgs bosons collide. Despite being the most easily identifiable appropriation from science in the poem, it is presented using conventional poetic devices, such as parallelism, other repetitions, and assonance. These poetic techniques are conventional both in the tradition set by Armantrout's own poetry and by the larger poetic tradition itself. This 'native language transfer' provides evidence for the argument that Armantrout's poetry attempts to speak in the language of science, as a second language learner communicates in the target language. The lexical and syntactic parallelism that frames much of the first section in the line 'Because you dodge… / Because you split' induces readers to look for semantic connections between the parallels. In this case, a relationship exists mostly on a structural level as the second repetition of the phrase is followed by an inversion of an idiom and 'no-difference' results in the foregrounding of two different ideas: evasion and non-negotiation. By paralleling these ideas Armantrout drives readers to look for meaning in their combination, particularly in their relation to a search for some fundamental essence of existence that eludes classification. The language of scientific theory, from which Armantrout takes this idea, does not provide this meaning, but Armantrout's transferral of poetic technique to the visions of science encourages readers to look for these associations. The first section is given in a number of fragments which resist answers, but invites readers to undertake a personal search for meaning in the following sections. This method provides conceptual parallelism in its relation to Armantrout's poetic manifesto following Alice Fulton and Lyn Heijinian, and to the internal search in the following sections of the poem.

The second section of the poem, though less obviously scientific, presents a moment of everyday experience in a style more closely related to the language of science. This inverts

the method used in the previous section, which gave scientific theory in poetic form to create a type of 'chirality' in Armantrout's poetry. This method is not identical in all respects but shares related symmetries. In the second section, poetic visions explore similar ideas of separation, splitting, and one versus many, but does so using linguistic features identified in Strevens's and Widdowson's work as those commonly used in scientific English. The cat in the second section is introduced using a long nominal group and a passive voice, which results in the word 'muscular' assuming primary focus, drawing readers to the strength and anatomical system of the cat—a system defined primarily by physiology. This linguistic structuring is critical to the information Armantrout is presenting to the reader because it makes the internal system of the cat, along with the other non-personal descriptions of it such as 'grey', more important than the cat as a unified being. The cat as a complete 'self' is not given without readers first being made aware of the separate features that make it up. This segregation continues with the distance between personal and public spaces and systems in the rest of the poem, such as the 'supermarket' and transport system in the final section. The use of compound nouns in the second section, 'cinderblock' and 'supermarket', are of interest because these types of noun 'are extremely common in scientific and specialised English because they make it possible for complex notions to be expressed in a concise, elegant way'.[786] This does not mean Armantrout is applying compound nouns for the same reason but offers an example of the adapted transfer of characteristics from one language to another. This transferral indicates a deliberate manipulation of rules, 'a strategy' which Karen Whalen argues makes second language writing 'necessarily … more powerful and consequential',[787] and a synthesis that supports Oxford's argument for cognitive language learning strategies. Oxford argues that when 'the learner consciously chooses strategies they become a useful toolkit for active, conscious, and purposeful self-regulation of learning'.[788] Ideas of self-regulation, particularly in terms of language use, have been a consistent part of Armantrout's poetic manifesto since 'Extremities' and 'swords' were later developed alongside scientific vision, most obviously in *Versed's* cellular metaphors such as the 'Little golden/self-measuring/extents' in 'Pleasure'. Additionally, Oxford's definition of cognitive language learning strategies show that learners consciously apply these methods in order to 'link new

[786] S. Blattes, V. Jans, and J. Upjohn, *Minimum Competence in Scientific English (Nouvelle Édition): Edition 2013,* (EDP Sciences, 2013), p. 138.
[787] A. Cohen and E. Macaro, *Language Learner Strategies: 30 Years of Research and Practice*, (OUP Oxford, 2007), p. 244.
[788] Oxford, p. 2.

information with existing schemata'.[789] This progression of knowledge through new and existing information is one of the primary ways that Armantrout's creation of a PIL develops ideas and questions in *Itself.*

'Split', as is often the case with Armantrout, forms subtle questions on the nature of reality and perception and although the final section of the poem refuses to conclude these questions it does provide some resolution. Each section of the poem to this point explores the existence of the Higgs boson—the paradox of trying to see an almost impossible vanishing particle that remains largely invisible, despite being an essential component of everything around us. Language, for Armantrout, shares these same difficulties—the meanings of words vanish as we attempt to define them. The poem explores borders between one and many, whether the one is a vanishing particle or an observer on a couch, along with the difficulty of traversing that border to understand our place in the world. The poem returns to a repeated difficulty in Armantrout's poetry of how it is possible to convey and understand something that is invisible or absent, a difficulty shared by particle physics. The final section of 'Split' does not answer the question, but develops it, a technique Armantrout notes is 'probably the most important thing [in the sciences]…[and that] an answer should lead to another question' in order to 'keep moving'.[790] In 'Split', Armantrout creates a feeling which brings the difficulty of observation and perception into focus and she keeps the focus obscure—'trucks' or 'blossoms', and obscured—'between branches', branches that divide in the first section, but at this point represent an important obstruction to clear vision that translates the scientific theory into a poetic moment. Armantrout creates a PIL in the final section by bringing the visions of science into poetic metaphor through a unique lyric moment that distorts time and movement to create a hypothesis for perception that she intends to continue testing. This continued and controlled experiment can be found again in the poem 'Difference', from the same section of the volume.

1

Catch us up
to where we are

[789] Abdalmaujod A. Hardan, 'Language Learning Strategies: A General Overview', *Procedia - Social and Behavioral Sciences,* 106 (2013), 1712–26 (p. 1716).
[790] Zach Mueller, 'An Answer Should Lead to Another Question: Talking with Rae Armantrout', *The Rumpus,* October 25th, 2017, (2017), <http://therumpus.net/2017/10/the-rumpus-interview-with-rae-armantrout/> [accessed 28 February 2018].

today—

these pants!
this hair!

~

It's been a good year
for unique, differentiated products.
~
I'm more interested
in quarks:

up and down,
bottom and top,

simple units
of meaning.

2

If self-love
were a mirage,

it would decorate
distance,
shimmer over
others' eyes,
evaporate
on contact

'Difference'[791] was first published in the *New York Times* in 2012[792] in the Opinion section of the Sunday Review, which was intended to provide poetic relief for those filing tax returns. Other poets in the section included Mark Strand, Cara Benson, Laura Kasischke, Dean Young, and Jane Hirshfield. Many of these poets shared poetic concerns with Armantrout, such as Strand's investigations around self and identity, Kasischke's desire to 'cut through

[791] R. Armantrout, 'Difference', in *Itself,* (Wesleyan University Press, 2015), p. 12.
[792] 'Tax Break: No Accounting for Poetry', *New York Times,* April 14 2012 (2012), <http://www.nytimes.com/2012/04/15/opinion/sunday/at-tax-time-no-accounting-for-poetry.html> [accessed 1 February 2017].

suburban American illusion',[793] and Hirshfield's frequent preoccupation with perception. 'Difference' is positioned amongst poems that link money and economic functions to abstract concepts, such as time, love, and absence, and are underpinned by conceptual metaphors of money. The economic reference relating to 'differentiated products' in the middle of the poem's first section provides a way in to problems that Armantrout raises.

The theory of product differentiation originated largely in the work of economist Kelvin Lancaster who argued that 'consumers do not demand market goods per se, but rather the characteristics and attributes provided by market goods',[794] that is differentiating the product from others to make it more appealing to a particular target market and creating an illusion of difference. This succinctly offers another idea of perception, which questions whether 'difference' is perceived or actual. In this poem Armantrout uses hyper-extended metaphors from previous poems as far back as her first volume *Extremities,* and these extensions relate largely to the self, or as Armantrout notes, 'what a self is, where the limits of selfhood are, and, perhaps, … of ontology, of what it means to "be"'.[795] Capturing the idea of a self is challenging and hyper-extended metaphors work alongside scientific and economic references to demonstrate the 'slither'[796] of words, ideas, and now self.

'Difference's' inquiry takes up the concerns of her contemporaries, Kasischke and Hirshfield; the growing desire amongst poets to move past 'suburban American illusion'[797] and problems of perception means that creating a hypothesis and an experiment becomes necessary. In interpreting the poem's creation of a PIL it is most useful to start with the second part, which shares the stylistic features of a scientific hypothesis by following the structure of an: 'if this, then that statement'. Richard Braithwaite famously defined scientific hypothesis as 'a general proposition about all the things of a certain sort. It is an empirical proposition in the sense that it is testable by experience; experience is relevant to the question as to whether or not the hypothesis is true, such as whether or not it is a scientific law'.[798] This particular type of hypothesis often suggests a potential relationship between the different elements in the

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[793] Stephanie Burt, 'Terror of Teenage Life', *New York Times,* (2011), <http://query.nytimes.com/gst/fullpage.html?res=9B0CE1D61731F930A35754C0A9679D8B63&pagewanted=all> [accessed 28 March 2018].
[794] R.B. Ekelund and R.F. Hébert, *A History of Economic Theory and Method: Sixth Edition*, (Waveland Press, 2013), p. 385.
[795] Lederer.
[796] Armantrout and Press, p. 55.
[797] Burt.
[798] Harris, p. 24.

statement, a strategy Armantrout borrows despite inverting the typical positioning by placing her poetic hypothesis at the end of the poem. This positioning does not detract from the work done by the section, it is clear from the HEM and the previous poetry in the volume that this is an on-going experiment, a deliberate one. Armantrout says she subscribes to Williams' claim that 'the poet thinks with his poem. That's true for me. If I'd already seen the end, I wouldn't make the trip',[799] an emphasis made at the end of the poem by an absent full stop. The section offers a HEM which returns readers, as is often the case in *Itself,* to Armantrout's earlier work. In this case 'Difference' leads directly to the 'desert' in 'Extremities'. In 'Extremities' words are dangerous 'swords' that create 'lines across which / beings vanish/flare'. In 'Difference' the same problem is revisited but the vantage point is changed; it is our 'selves' that 'shimmer over / others' eyes' creating illusion and deception, which like a reflection 'evaporate[s/] on contact' whereas previously in the 'glitter' was external to our 'selves', and language as a separate entity took greater responsibility for the problem.

Working backwards through the poem does not present a problem as Armantrout's notational[800] writing style means sections are able to function as independent moments or parts, and doing so brings readers to the assertion that 'quarks' are 'simple units of meaning'. Armantrout borrows these 'units' from the language of science to create a metaphor for language as the fundamental constituent of the self, in the same way that the quark is a fundamental constituent of matter. Armantrout's creation of a PIL is evident in her interspersion of scientific terminology with quarks and their flavours, yet these are incorrectly termed 'simple units meaning'. These references retain a basis in both scientific and poetic style, yet they would not transfer sensibly to the discourse of either, demonstrating a third system where meaning has been synthesised from both science and poetry.

Ideas of 'mirages' and 'simple units of meaning' return to Armantrout's previous interrogations of reflection and language as constitutive of self, past examples have been tied with particle physics, the self and how self is differentiated from other 'selves'. The reflective and chiral-like nature of the quarks 'up and down, / bottom and top', works with the difficulty in their observation, they are never found in isolation. This difficulty is known as confinement, which 'has been for many years the most challenging problem for the theory of strong interactions. We know now, almost certainly, that quarks exist as point-like particles

[799] Bull.
[800] Introduction, p. 26.

with definite quantum numbers. At the same time, they have never been observed as real stable particles'.[801] Every quark has an antiquark and is an example of chirality in subatomic particles, suggesting another type of reflection, which 'evaporate[s]/ on contact', but Armantrout's metaphor for language is the most important feature to take from the action of these 'simple units', which like quarks are continually combining, colliding, obliterating and reforming. This parallel demonstrates a 'Wittgensteinian double bind', which means 'the objects and events of this world can never be experienced directly', and one which Ron Silliman has previously noted Armantrout's poetry 'obsessively returns'[802] to.

Armantrout's violent and paradoxical view of language is supported by the HEM in the first section signalled by the line: 'these pants! / this hair!' which echoes the 'hair-do' from *Money Shot's* 'The Air', in which words are memes[803] that should be subjected to continual evolution. Readers know that this HEM comes from 'The Air' because of the repetition of 'hair' and 'quark', which in both poems is a symbol for a meaning component. The consistency of the extended metaphors of both poetic and scientific vision reinforce the PIL argument because they demonstrate key features of Oxford's cognitive learning strategies, including 'repeating … and using formulas and patterns',[804] which suggests that Armantrout is consciously using strategies to develop her understanding of scientific visions through poetry. In 'Difference', the previous HEM evolves to consider language that has been stripped down to its fundamental constituents in a Wittgensteinian conception of language, which 'is like any material object in that it involves simple units of meaning put together in complex ways'.[805] These 'simple units' are phonemes and morphemes arranged to create language, an idea that develops Armantrout's previous Lacanian reference that 'language is consciousness'.[806] This in turn plays a role in determining the '"conceptual primitives" that organise the world and focus our thoughts and actions',[807] and these can only arise when a child reaches the 'mirror stage' and realises the image in the mirror is his own. At this point, language can be viewed as constitutive of the 'objects and events' that make up the world and

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[801] J. Nyiri Vladimir N. Gribov, *The Gribov Theory of Quark Confinement*, (Singapore: World Scientific, 2001), p. 104.
[802] Armantrout, *Veil: New and Selected Poems*, p. xv.
[803] Chapter Three, pp. 16–17.
[804] Rebecca L. Oxford, *Language Learning Strategies: What Every Teacher Should Know*, (New York: Newbury House Publisher, 1990), p. 70.
[805] Dale Jacquette, *Wittgenstein's Thought in Transition*, (Indiana: Purdue University Press, 1998), p. 18.
[806] Chapter Two, p. 34.
[807] Kenji Hakuta Ellen Bialystok, *In Other Words: The Science and Psychology of Second-Language Acquisition*, (New York: BasicBooks, 1994), p. 93.

as words make up the self, which can never be 'observed directly', it must therefore, as Armantrout writes, 'evaporate on contact' like the quarks that disappear and reappear as if from nothing.

The economic reference that offered an opening into the poem's interpretation offers a glimpse of the developing metaphors and questions in Armantrout's work, with an importance that is reflected with its repetition in the title of the poem, questions of difference between 'selves' or, as Armantrout writes in *Versed,* 'this sense of/ my senses/ being *mine*' or 'How to distinguish one/light from the next'.[808] The reference adds to each section in the poem including the closing hypothesis: product differentiation can be applied to the self to give a Kantian perspective on self-love, an idea that acquires content—'what would enhance self-love and what would diminish it—only by comparison with others'.[809] A final answer is not given, but the question is stripped back so that it can be reformed or *re*dressed: 'Catch us up to where we are today', is followed by a HEM 'these pants! / this hair!' from the earlier poem 'The Air', which in turn reminds readers of the image of the decorator crab on the jacket of *Itself.* Decorator crabs 'conceal themselves partially through camouflage, by selecting or indiscriminately attaching materials from their environment to their exoskeleton',[810] but if the crab is stripped of these materials it will 'immediately begin to clothe itself again with the same care and precision as before'.[811] Language in 'Difference' is decoration as it 'decorates distance' in order to distinguish, but this decoration is potentially 'shimmer', and as the economic reference suggests, this difference between the characteristics and attributes of the 'self' and other 'selves' may only be perceived rather than real. Armantrout's PIL makes similar suggestions that the difference between scientific and poetic selves is largely perceived. Although this suggestion cannot always be the case it does attempt to shrink the distance between them.

The consistency with which Armantrout develops HEM in relation to scientific vision and language demonstrates an identifiable PIL, because the repeated strategies of transferral and simplification it uses creates, as earlier noted by Ellis, an 'individual language system'.[812]

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[808] Armantrout, 'Pleasure', in *Versed,* p. 18.
[809] Pippin, p. 117.
[810] Monique Alexandra Salazar, *Functional Aspects of Behavior and Morphology in the Decorator Crab Microphrys Bicornutus (Latreille, 1825) (Crustacea : Brachyura : Mithracidae),* (2013), p. 1.
[811] P. Castro and others, *Treatise on Zoology - Anatomy, Taxonomy, Biology. The Crustacea, Volume 9 Part C (2 Vols): Brachyura,* (Brill, 2015), p. 604.
[812] Ellis, p. 350.

This system meets the requirements of interlanguage in other ways by demonstrating various 'language learning strategies', which René Appel and Pieter Muysken recognise as clear markers of Interlanguage. Armantrout's use of these strategies, in her engagement with science is deliberate and can be seen at work in 'Head':[813]

1

You just feel wrong
so you convert

one neutron
to a proton,

emit beta radiation.

2

You try
not to squirm,

to cancel
yourself out,

still, in dreams
you narrate

each discharge
in the first person.

3

As if you were
banging your head

on every beach
in frustration

'Head' is positioned in the second section of the book titled *Membrane.* The poems in this section are often concerned with the deliberate filtering of ideas or, as Armantrout writes in the first poem of the section 'Membrane', the creation of a poetic 'ion/ selection/ channel/

[813] Armantrout, 'Head', in *Itself,* p. 54.

membrane'.[814] This scientific vision is closely tied throughout the section with a more subjective type of selection which includes, as Armantrout writes in another poem 'Control', 'learning to control our thoughts',[815] which can only be attempted by learning to be aware of language and its 'phoneme clusters'.[816] The precarious and paradoxical nature of these undertakings is examined in the poem 'Head'. The first section of 'Head' introduces ideas of instability via scientific and poetic language and vision, compressing subjective 'feelings' with the objective theory of beta decay.

Beta decay refers to a reaction that happens within the nucleus of an atom when a neutron decomposes into a proton and an electron. This happens because the nucleus has an unstable ratio of neutrons to protons so it 'spontaneous[ly] transforms[s] … to a structurally more stable nucleus, with the emission of energy in the form of ionising radiation'.[817] This scientific vision is simplified in the poem by Armantrout's omission of the whole decay process, creating a conceptual version of simplification, a feature of Interlanguage in which speakers often 'delete many function words and morphemes', and results in speaking a 'simplified interlanguage made up largely of content words still makes relatively adequate communication possible'.[818] Armantrout simplifies scientific vision in order to transfer its ideas to the more subjective self in her poetry—'You just *feel* wrong'. These transfers mirror the permeability of Interlanguage by moving linguistic elements from science through a poetic membrane 'that is, processes that imply what Martinet (in his Preface to Weinreich's Languages in Contact) calls "the permeability of linguistic cells"'.[819] The transfer of scientific terminology to the poetry does not weaken the poetic vision but drives readers to draw parallels and question both visions. Carmen Silva-Corvalán argues 'that the permeability of a grammar to foreign influence does not depend on its structural weaknesses, but rather on the existence of superficially parallel structures in the languages in contact'.[820] These parallels create interactions between words and ideas within the poem's linguistic cells, in a like manner to the reactions that occur under the surface of an atom; reactions, which in the second section have the potential to 'cancel/ your*self* out', [emphasis mine].

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[814] Armantrout, 'Membrane', in *Itself,* p. 37.
[815] Armantrout, 'Control', in *Itself,* p. 55.
[816] Armantrout, 'Kingdom 2 (A Poetics)', in *Itself,* p. 80.
[817] H.J. Biersack and L.M. Freeman, *Clinical Nuclear Medicine,* (Boston: Springer Berlin Heidelberg, 2008), p. 4.
[818] René Appel, p. 91.
[819] Carmen Silva-Corvalán, *Language Contact and Change: Spanish in Los Angeles*, (Oxford: Clarendon Press, 1994), p. 133.
[820] Silva-Corvalán, p. 144.

In the second section it becomes clear that Armantrout is using science and poetry to explore how language— 'each discharge / in the first person'— creates a membrane between self and world, mirroring the processes at work in the creation of an Interlanguage and demonstrating a desire to take hold of language and, through this, thoughts and self. It returns readers to a HEM from the poem 'Back' in *Up to Speed,* a poem that explores consciousness as perceived by embodied experience.[821] In 'Head' the defining properties of a nucleus, that is the number of protons it contains, are parallel to the defining properties of the self, that is words we use and these words reside in the conscious 'head' or brain of an individual. The second section indicates a deliberate attempt to control language— 'You try' in an attempt to see or exist as a pre-language constructed self, before the unconscious— 'in dreams', 'cancel[s]/ yourself out'. In this poem the 'mirror images' from 'Back', which seemed to offer balance, now creates instability because of our failure to completely control and take hold of the language we use and think in. The third section confirms the impossible task of the self, attempting to escape from the 'first person' language it thinks in, a first person deliberately absent from the poem. Unlike the repetitive echoes from 'Back', which expand the question by looking at the problem in different words, in the final section of 'Head' the self fights back by repeatedly 'banging' solid ground amidst a sea of language. This sea exists internally and therefore this is where much of the conflict lies. Reactions in language occur within the linguistic cells that make up the self, these reactions are words 'discharge[d]/ in the first person' as a way to create balance between different internal dialogues, and this vision is given an extra layer of meaning by the description of atomic cells and their emission of protons to create stability.

The final section of *Itself, Live Through,* looks at language and the self, alongside our inability to escape an innate human selfishness, and Armantrout says this is 'a selfishness that is both natural and destructive'.[822] The poem 'Expression' considers these problems and focuses on language as a separate entity, and how it exists, before the internal reactions readers saw in 'Head'. In 'Expression', language can be used, worn and picked up, but it is impossible for the self to avoid its influence:

> Give me your spurt
> of verbs,

[821] See Chapter 2, p. 66.
[822] Lederer.

your welter
of pronouns

desiring to be spread.

Bulge-eyed, clear-
bodied brine-shrimp

bobbing to the surface.

I prefer
the hermit, trundling off

in someone else's,
exoskeleton—

but we all
come down,

to self-love,
self-love, which

like a virus,

has no love
and has no self.

'Expression' looks at different qualities of language and despite displaying some preference for the way it can be used the poem remains conflicted. The poem suggests a PIL in its absorption and transferral of language from physiology and microbiology, which it uses to create new metaphors for language. The interaction between scientific and poetic vision causes less friction in 'Expression' than elsewhere in the volume, and the poem provides a unification of scientific and poetic language by considering language again as constitutive of self and self as universal. The first five lines offer the idea of language as an abundant, yet primitive and uncontrolled, life form with a 'spurt / of verbs' and 'welter/ of pronouns', which 'bo[b] to the surface' as 'brine shrimp'. At first, it seems Armantrout prefers 'the hermit' crab approach to language, which appropriates 'someone else's' hard shell or 'exoskeleton' to protect itself, or, if readers develop the previous crab and dressing metaphors, to *be* someone else.

The poem ends by dismantling both these ideas and at the same time giving another hypothesis for language, whether scientific or poetic, by making it an individual 'virus'. It is impossible to escape from that which 'we all / come down/ to self-love' and, if we continue the Kantian allusions from 'Difference', self-love is equated with the 'natural yet destructive' selfishness Armantrout pays attention to in this section of the volume. Immanuel Kant writes in Section 2 of *Groundwork for the Metaphysics of Morals:*

> 'We find nothing besides the moral ground of duty that could have been powerful enough to move us to this or that good action and to so great a sacrifice; but from this it cannot be inferred with certainty that no covert impulse of self-love, under the mere pretence of that idea, was not actually the real determining cause of the will; for we like to flatter ourselves by falsely attributing to ourselves a nobler motive, whereas in fact we can never, even by the most strenuous self-examination, get entirely behind our covert incentives, since, when moral worth is at issue, what counts is not actions which one sees, but those inner principles of actions that one does not see.'[823]

This passage is concerned with 'the reflective awareness required by Kantian morality',[824] yet even more pertinent when considering these allusions in Armantrout's poetry is how it helps readers understand the role self-love plays in our 'strong propensity for self-deception'.[825] As seen in 'Difference', Armantrout believes self-deception is inextricably bound with language, creating the 'mirage' of a self which in turn deceives others.

Language in 'Expression' undergoes frequent changes of direction offering ways to understand the reasons behind Armantrout's creation of a PIL. 'Expression' returns to Armantrout's previous poetic explorations of language; for example, in the poems, the initial Lacanian idea of language as a separate entity is an idea realised through the HEM from 'Back' in 'Head', before moving to the Hegelian idea of language, which according to Hans-Georg Gadamer's is a 'self-effacing and temporary medium of thought or merely its

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[823] Béatrice Longuenesse, *I, Me, Mine: Back to Kant, and Back Again*, (London: OUP Oxford, 2017), p. 227.
[824] Henry. E. Allison, *Kant's Groundwork for the Metaphysics of Morals: A Commentary*, (Oxford: OUP Oxford, 2011), p. 102.
[825] Allison, p. 102.

casing',[826] an idea developed from the poem 'Difference'. At this point, language can be worn as an 'exoskeleton' though the 'hermit', like the decorator crab, wears language as a deceptive embellishment that can't represent the 'real' self.

By the end of the poem Armantrout moves language to another location; it becomes 'like a virus' 'constantly changing as new mutations appear',[827] but it relies on a host cell, the self, to reproduce. The self, or host is forced to create copies, which parallel the creation of Interlanguage by 'slowly revis[ing]' linguistic cells making language specific to the individual self. Language, by the end of the poem, is closer to Gadamer's suggestion that there is a 'necessity of returning to the lived experience of the "house of being", language'.[828] Armantrout's 'virus' lacks both 'love' and 'self' detaching language, consequently preventing any theory for the relationship between the self and language from resting here either. Gadamer's conception of 'language as the permanent abode of thought'[829] offers some relevance for Armantrout's poetry, which often focuses on the small everyday moments that contribute to the meaning created by lived experiences, such as the moment of a 'truck /glimpsed /between branches' and a 'grey cat trot[ting]'. For Armantrout, words, thoughts, and the self are linked, and her assertion that it is impossible to divorce language 'from thought, words from their histories'[830] has become a permanent fixture in her poetry. These moments offer a way for Armantrout to achieve her previously stated desire of 'correlat[ing] dogma with experience',[831] an objective that presents one argument for her continuing engagement with scientific vision and language.

Armantrout wears the different languages of science and poetry in a similar manner to a decorator crab wearing its collected debris. The way these languages are positioned, both structurally on the page and in the creation of new metaphors, forces readers to look for associations, so that even when readers do not possess the same 'amateur enthusiast' position for understanding scientific theory that Armantrout does, the importance of the PIL lies in our cognitive processing of it. In the creation of a PIL, Armantrout transfers the visions of science to poetry often attempting to link abstract theory with lived experiences. In these

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[826] Stephen Houlgate, *The Opening of Hegel's Logic: From Being to Infinity*, (Indiana: Purdue University Press, 2006), p. 74.
[827] John N. Thompson, *Relentless Evolution*, (Chicago / London: University of Chicago Press, 2013), p. 138.
[828] Pippin, p. 90.
[829] Houlgate, p. 74.
[830] Armantrout and Press, p. 13.
[831] Armantrout and Press, p. 75.

transfers, Armantrout's PIL makes the vanishing particles of words and Higgs bosons accessible to each other by forming metaphorical relations between them in the consistent creation of a new system of meaning. 'Mary Hesse argues (along with Hans-George Gadamer) that metaphor is primary to literal meaning. In this view, language (both scientific and "ordinary") is metaphoric "through and through", and literal meanings are seen as emerging only as the end product of a long process of creatively deploying forms of discourse that are themselves (and unavoidably so) imprecise protean and ever changing.'[832]

The 'simple units of meaning', or words that make up the self and the fundamental particles that make up the universe, can only be known by making their absence visible through metaphor, or by creating a language which is able to 'pass through the void' between them. Armantrout's creation of a PIL is, in many ways, a natural progression from her earliest poetic ideals, of being aware of language's duplicities, to her dismantling and reforming of language and meaning until finally her creation of 'new provisional entities out of whatever the world throws at [her]'.[833] Armantrout's PIL offers the poem as a way to create a bridge between the different languages of science and poetry by bringing language and information from scientific vision into poetic insight, with structured line and stanza breaks and consistent strategies of metaphor use that have evolved over the course of her poetry, which remains predominantly the case in science focused poems. Poetic insight in Armantrout's poetry evolves from her continued desire to relate the visions she finds in science to her lived experience. This desire means that the ideas behind scientific visions become more accessible because Armantrout essentially uses scientific and poetic vision metaphorically; she thinks of one in terms of another to create, find, and arrange connections between them before developing them with repetition and HEM. Armantrout's PIL is frequently used to redefine questions, in light of new associations and information, rather than to answer them; this means that understanding the poem becomes a process in which readers must create their own Interlanguage from Armantrout's language and visions of the world and their individual lived experiences.

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[832] Evelyn Fox Keller, *Making Sense of Life : Explaining Biological Development with Models, Metaphors, and Machines,* (Cambridge, Mass; London: Harvard University Press, 2002), p. 119.
[833] Fitzgerald.

Chapter Six:
Conclusion

We shall not cease from exploration

And the end of our exploring

Will be to arrive at where we started

And to know the place for the first time.'[834]

T.S. Eliot, *Four Quartets*

Throughout this thesis it might be difficult to see what cells, pink plastic radios, birds and decorator crabs have in common, but in Armantrout's poetry they represent some of the metaphorical landmarks on her painstaking attempt to formulate questions, interrogate language and deconstruct truth claims. These questions relate to self, collective, origins and attention in relation to lived experience through and beyond language. The idea at the heart of T.S. Eliot's *Four Quartets* provides a basis for the path Armantrout's poetry takes; except neither poet nor reader are expected to 'know the place', only to know the question a little better. This thesis has examined, in a largely chronological manner, the development of Armantrout's poetics from its Language centred origins to its creation of a poetic interlanguage—a new system in which encodings are informed by two different languages. The resulting poetry offers readers a role in creating meaning as they consider understandings of science, poetry, self, and expressions of culture more generally. Armantrout's poetry presents unique challenges and rewards for readers by offering potential ways to access difficult concepts, and objectively question the visions and the language that constitute the cultural moment in which they live.

[834] T.S. Eliot, 'Little Gidding', in *Collected Poems 1909-1962,* (Faber & Faber, 2009), p. 222.

The journey undertaken through Armantrout's poetry by author and reader, from its start point in the 'desert'[835] to where her last volume *Partly* arrives: 'out past/ the end /game', [836] is a circular one that begins with desert mirages and returns to another opaque location 'where things / get fuzzy'.[837] This movement does not represent a futile attempt to get nowhere and back again, but an essential passage through moment-by-moment lived experiences that continually modifies language and the self. This modification is represented in the form, structure and content of Armantrout's poetry, which develops a cycle of creation, destruction and revision. Readers learn, along with Armantrout, that in order to get 'results' they must continually 'revise what [they are] waiting for', so that language 'becomes dinner/gradually'.[838]

Armantrout's method of continual revision grew, in part, from early childhood and which led to her subsequent desire to relate 'dogma to experience'. [839] Examining Armantrout's early poetry reveals her struggle with this ultimately unattainable wish and leads to her rejection of linear narratives and absolute answers, as well as cementing her mistrust of language and metaphor. In earlier work Armantrout initially treats the origin stories of religion and the cosmological explanations offered by science as mythologies, remaining suspicious of their truth claims and the language they are given in. Yet, as Armantrout's poetry evolves, religious language and visions appear less frequently and, though she remains aware of its influence, the language and visions of science become more significant as Armantrout uses them as a tool to deconstruct and create distance between concepts.

Armantrout finds it impossible to escape words and this failure brings her to another 'important project and a doomed one' [840] that is trying to take hold of self. According to Armantrout, self is unavoidably constructed through language—she defines self as: 'this sense of/ my senses/ being *mine*'.[841] The complication that arises for Armantrout through her definition of self is that language and metaphor are inherently deceptive, making a self which is formed this way illusory too. Armantrout distrusts language, particularly metaphor, writing that 'metaphor should make us suspicious, but we can't do without it'. Armantrout's

[835] Armantrout, 'Extremities', in *Extremities,* p. 1.
[836] R. Armantrout, 'The Ether', in *Partly: New and Selected Poems, 2001-2015,* (Wesleyan University Press, 2016), p. 29.
[837] Armantrout, 'The Ether', in *Partly: New and Selected Poems, 2001-2015,* p. 29.
[838] Armantrout, 'Results', in *Versed,* p. 4.
[839] Armantrout and Press, p. 75.
[840] Armantrout and Press, p. 55.
[841] Armantrout, 'Pleasure', in *Versed,* p. 18.

poetry stretches metaphor hyper-extending it across poems and, consequently, distances of space and time. This complicates the Language and lyric elements of her poems and highlights the need for a new cognitive method able to interpret poetry that, as Ron Silliman argues, is neither Language nor lyric.[842] Armantrout uses her deliberate extension of metaphor as a way to lift the illusion it creates. This means references, experiences and images that contribute to it to create input mental spaces, which have to be gathered and blended into a new conceptual space. Armantrout's hyper-extended metaphor attempts to get beneath what she calls the 'crust' of metaphor in a controlled manner, by progressing features which are shared and unknown from the different input spaces to create a reformed target. The extended target that Armantrout's hyper-extended metaphors produce is the result of cognitively filtered associations; the target then undergoes the process again, meaning that metaphors are continually refined and developed across several volumes of poetry. One of the main reasons for Armantrout's continual disestablishment of language and use of hyper-extended metaphor is her attempt to move past the 'system of defensive barricades' that make up, as she writes, 'most of what I call "me"'.[843] Gilles Fauconnier and Mark Turner's work offers a system for addressing these problems but cannot account for Armantrout's continual destruction of her individual meaning network or, as they term it, 'web'.

The conceptual destruction, which continually returns readers to Armantrout's desert, works in part through her inclusion of scientific language and vision, which inevitably brings its own instabilities; as Roald Hoffmann writes 'the language of science is a language under stress. Words are being made to describe things that seem indescribable in words – equations, chemical structures and so forth. Words do not, cannot mean all that they stand for, yet they are all we have to describe experience'.[844] Scientific language, just like poetic language, faces the same kind of ventriloquy, in which '*thing* and *idea* don't really merge'.[845] In Armantrout's poetry, metaphor remains one of the most important tools for examining the gaps between '*things* and *ideas*' because in its deception also lies its greatest asset—its inability to lead to single conclusive answers.[846] Armantrout uses metaphors which engage scientific and poetic vision to ask her self and her readers if they know what questions they are asking and of whom. She doesn't want critics or readers to find answers or conclusive

[842] Armantrout, *Veil: New and Selected Poems,* p. xi.
[843] Armantrout and Press, p.161.
[844] T. Frängsmyr, B.G. Malmström, and Nobelstiftelsen, *Chemistry, 1981-1990,* (World Scientific, 1992), p. 33.
[845] Armantrout and Press, p. 55.
[846] Mueller.

interpretations in her poetry, nor does she want readers to simply reframe or repeat the questions she asks. Armantrout's poetry advocates the necessity of continually pruning meaning, metaphor and language in order to reform the question.

Limitations remain when using Fauconnier and Turner's system in the interpretation of Armantrout's hyper-extended metaphors; firstly, in its aim to reduce 'the conceptual complexity of inputs',[847] an idea at odds with Armantrout's rejection of conclusions, and her belief that 'an answer should lead to another question [because] that's how things keep moving'.[848] Difficulty also arises in Armantrout's inclusion of scientific vision and language. Fauconnier and Turner's theory does not address the problem of importing foreign language and systems into metaphor, an action that forces readers to create connections between the language and visions of science and poetry, even when one language is largely foreign to them. Larry Selinker's interlanguage theory provides a useful lens for analysing the problems that this creates for readers. In Armantrout's poetic interlanguage, scientific language informs both the content of the poems and their physical structure. Her sectional poems often contain and create conceptual packets that can represent self-contained units or mental input spaces, which can be combined to extend metaphors.

Readers, in line with the interlanguage theory and Armantrout's cycle of revision as outlined in the poem 'Results', have to 'slowly revise interim systems to adapt new hypotheses to the target language', and 'gradually extend'[849] these across different contexts. Language for Armantrout is permeable; it is shaped by external influences and our conscious attempts to control it, and her use of metaphor and creation of a poetic interlanguage is an attempt to 'pass through the void'[850] between 'what can be known and what it is to know',[851] or, as Hoffman writes, the difficulty of having to use words to describe things that seem indescribable in words'.[852] Despite the risk of overgeneralisation and transfer errors, the value of Armantrout's poetic interlanguage lies in the readers cognitive processing of it. Armantrout transfers the often abstract visions of science to poetry in an attempt to link theory with lived experience. This action parallels the action of metaphor—she thinks of science in terms of poetry and vice versa in order to create, find and arrange connections

[847] Marcus Callies, p. 126.
[848] Mueller.
[849] Song, p. 778.
[850] Armantrout, 'Chirality', in *Itself*, p. 3.
[851] Armantrout and Press, p. 75.
[852] Frängsmyr, Malmström, and Nobelstiftelsen, p. 33.

between them—a process which readers must also engage in as they create their own interlanguage from the visions offered by Armantrout and their individual lived experiences.

Armantrout's interrogation of language and grappling with the self situates her amongst other contemporary American poets who are concerned with these questions. A new, more vigorous preoccupation with both self and language has been emerging over the last decade, and these concerns do not find balance in current theoretical approaches. A broad spectrum of different poetic styles think about the self in a manner that is somewhere between lyric representations of "I" and a Language poetry critique of it, often from poets not associated with a particular tradition of writing. Many of the initial ideas that underpinned Language poetry are no longer considered a type of radical poetics and are at ease in mainstream American poetry. Many critics have argued, including Michael Robbins, that poetry editors themselves have '*created* the "other traditions" of "postmodern American poetry", "avant-garde poetry", "outsider poetry", "new American poetry", and the like'.[853] This indicates an absence of separation, yet it does not take into account that the reason for such a shift could be a reaction to wider cultural changes brought about by the enormous and accessible glut of information that flows bilaterally through the internet, which as earlier discussed in relation to the work of Ethan Zuckerman, paints a false picture of connection and distorts 'self' knowledge. As Marjorie Perloff writes, the digital age creates poetry in which 'other textual echoes inevitably play a primary role'[854]—recognising the bombardment of fragmented and distorted dialogue. It follows that avant-garde poetry and its concerns were able to become part of mainstream poetic culture because of a collective concern with the self and language.

The work of Jane Hirshfield, Laura Kasischke and Mark Strand pays close attention to self and language, and how they connect or disconnect. Strand explores self extensively in his poetry, though unlike Armantrout he offers more conclusive theories of self, one of which can be found in his poem 'The Man in the Mirror';[855] in this poem Strand sees himself reflected in the mirror as self and other. Self, he concludes in the final stanza, is based on a series of illusions:

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[853] Michael Robbins, 'Ripostes: Postmodern American Poetry: A Norton Anthology, Edited by Paul Hoover.', *Poetry Foundation (*Originally published in Poetry Magazine), July 1st (2013).
[854] Marjorie Perloff, 'Poetry on the Brink: Reinventing the Lyric', <http://marjorieperloff.com/essays/poetryonthebrink/> [accessed 11 May 2018].
[855] Mark Strand, *Reasons for Moving ; Darker ; and the Sergeantville Notebook: Poems*, (Knopf, 1992).

It will always be this way.
I stand here scared
that you will disappear,
scared that you will stay.

Strand's last stanza is remarkably similar to Armantrout's in the poem 'Prayers':[856]

the fear
that all *this*
will end.

The fear
that it won't.

In Armantrout's poetry the emphasis relates more to a struggle for 'self' identification against wider cultural pressures, yet shares a likeness with Strand's conflicted ideas of self, other, illusions and reflection. Despite popular misconceptions of the phrase a 'mirror image', Umberto Eco writes: 'mirrors themselves do not reverse or invert … it is the observer … who by self-identification imagines he is the man inside the mirror and looking at himself realises he is wearing his watch on his right wrist. But it would only be so if he, the observer I mean, were the one who is inside the mirror *(Je est un autre!)*'.[857] Despite the difference in delivery, both Strand and Armantrout play with Eco's ideas of self and mirror as illusions; from Armantrout's 'lines across which / beings vanish / flare'[858] to her later use of science to pose the question: how can we know 'what is reflected back'?[859] This is an idea Armantrout often revisits, asking 'if we exist only as paired, entangled, tautological images, do we exist at all?'.[860] It is also addressed in 'Back', where Armantrout cross-examines Lacanian suggestions on the formation of the self:

We were taught

[856] Armantrout, 'Prayers', in *Money Shot*, p. 9.
[857] U. Eco, *Semiotics and the Philosophy of Language*, (Indiana University Press, 1986), p. 205.
[858] Armantrout, 'Extremities', in *Extremities*, p. 1.
[859] Armantrout, 'Human', in *Money Shot*, p. 39.
[860] Armantrout and Press, p. 79.

to have faces
by a face

looking “back”

The metaphor of the mirror returns readers to Lacan’s idea of self as an illusion because our awareness of self follows the onset of language, an illusion, according to Jerome McGann, which Language poets deliberately critique. The self in Language poetry takes a similarly circular and essential journey to the one which Armantrout’s poetry travels: ‘there’s a place that you’re going from and a place that you’re going to; to get to that place, that tracking, is as worthwhile as the endpoint of going, because while you’re going there you find other things and those things are related to the final place; that helps to define what it is when you get there. New combinations and connections are experienced. In finding your locus you redefine it again each time, systematically finding new coordinates’.[861] Language poetry makes it a priority to critique both self and language, yet this critique is no longer limited to Language poets or to Armantrout. It is no longer the ‘alternate route’ suggested by Jerome McGann, but a necessary direction taken because of a constant and rapidly changing landscape of experience.

Jane Hirshfield also demonstrates poetic concerns with self, language and metaphor writing that ‘traveling by language from self into the world is also a primary way that humans understand experience. Language discovers and creates itself through metaphor, and through that process external and internal words reveal their interconnection’.[862] Hirshfield takes up poetry’s ability to ‘displace the existing self with a changed one’,[863] yet Armantrout’s poems seem to retain a more dispassionate approach that allows language to direct outcomes, not poets. Armantrout, like Hirshfield, finds metaphor a generative tool in terms of self and language but, in contrast to Hirshfield, she places a greater emphasis on the facets of experience that it also hides; her poetry retains a lyrical ‘restless activity’[864] and picks ‘at

[861] J.J. McGann and J.J. McGann, *Social Values and Poetic Acts: The Historical Judgment of Literary Work*, (Harvard University Press, 1988), p. 210.
[862] Katie Bolick, 'Some Place Not yet Known', *Atlantic Unbound*, September. Interviews (1997), <https://www.theatlantic.com/past/docs/unbound/bookauth/jhirsh.htm> [accessed 9 May 2018].
[863] J. Hirshfield, *Ten Windows: How Great Poems Transform the World*, (Knopf Doubleday Publishing Group, 2015), p. 188.
[864] Jackson and Prins, p. 341.

metaphor as one might pick at a scab'.[865] This action results in a different use of metaphor, one that hyper-extends it. Michael Leddy suggests that this is because Armantrout wants her readers to be aware of 'the underlying structures of thought and language'.[866] Another plausible explanation comes from Stephanie Burt who argues that her resistance to language 'habits and conventions' is 'an expression of temperament'.[867] These arguments clearly have some basis in truth, particularly considering Armantrout's deliberate reaction to her mother's Evangelism, but what remains thirty years after her first collection *Extremities* is more fundamental and remains tied to her distrust of self, language and metaphor. Critics' portrayals of Armantrout's poetry as 'expression[s] of temperament' or as a window to self and reader awareness of language, do not give full value to the inquiry that Armantrout makes with her poetry. Armantrout offers a consistent, repeatable method, which arises from where the language and metaphors themselves take Armantrout and her readers. What appears to be a temperamental incline to chaos, is in fact a lean towards applying this type of theory to poetry, the idea that changing initial conditions, such as the terms of a metaphor, produces multiple and non-linear associations out of which we can paradoxically detect patterns. What had origins in temperament or Language school ideology has evolved into an indispensable tool for unfolding possibilities by dismantling metaphor. This is a continual process in which 'the right word' can never be found and 'poem means homeostasis',[868] a way of regulating the self through continually taking apart language.

Strand, Hirshfield and Armantrout take up the idea that language is shaped by experiences, and that poets have a responsibility to pay attention to the 'constantly changing yet ever recurring stream of experiences'.[869] Hirshfield's comments are representative for this group of poets when she writes that intimacy with the self 'comes to us through this life that we are given, this ordinary life … finding the permeability to see an old apple tree outside the window or a woman sitting across from you on a bus. It's the only way we can see: with our own eyes'.[870] Armantrout also subscribes to the idea that experiences shape language by recognising that seemingly banal moments offer knowledge and wisdom. These moments are

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[865] Adair.
[866] Leddy and Armantrout.
[867] Burt.
[868] Armantrout, 'Approximate', in *Partly: New and Selected Poems, 2001-2015*, p. 50.
[869] L. Hernández-Romero, *Re-Evaluating Creativity: The Individual, Society and Education*, (Palgrave Macmillan US, 2017), p. 99
[870] Katherine Towler Ilya Kaminsky, 'Zen and the Art of Poetry: An Interview with Jane Hirshfield ', *AGNI* (2008), <http://www.bu.edu/agni/interviews/online/2006/towler.html> [accessed 9 May 2018].

then arranged and rearranged in what first appears to be unrelated instances of language and experience, but come together with hyper-extended metaphors to create a poetic interlanguage. Another of Armantrout's contemporaries, Laura Kasischke, also looks to moments of daily domestic life to explore bigger questions. Kasischke's poetry merges 'screen doors' and 'final breath[s]', 'seagulls' and 'surgery'[871] without trying to separate abstract feeling from lived experience. Burt writes of Kasischke that 'no poet has tried so hard to cut through suburban American illusion while respecting the lives, young and old, that it nurtures or saves'.[872] While poets like Kasischke, Strand and Hirshfield try to 'cut through suburban American illusion' to get to the knowledge offered by 'ordinary experience', Armantrout intersperses this type of illusion in her poetry mixing it with moments of domestic, banal and quiet reflection to simulate the manner in which experiences actually arise.

Armantrout's poetry refuses to provide resolution and stretches the limits of our theoretical abilities because of the manner in which it includes scientific language and its examination of difficult concepts such as self. The shared concerns of her contemporaries highlight the need for new critical approaches to metaphor in contemporary American poetry. This is especially pressing for poetry such as Armantrout's, which resolutely includes all the different types of language and communication that assaults every moment of her lived experience. As shown in Chapter Two, critics such as Michael Leddy, Stephanie Burt, and Rob Stanton spend more time creating a myth of Armantrout as a poet than they do employing specific methods for interpreting her poetry. In addition to Burt's assertion of 'temperament' to Armantrout's poetry, and Leddy's assertion that her poetry is motivated by ideological motives, Stanton frequently refers to Armantrout's supposed characteristics, such as 'typical Armantrout gesture[s]' and 'trademarks',[873] in his analysis of her poetry. These accounts of Armantrout treat her as a scientific specimen, providing collections of attributes to explain the poet, rather than the poetry that pushes at our theoretical limits.

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[871] Laura Kasischke, 'Hospital Parking Lot, April' and 'Breath', in *Where Now: New and Selected Poems*, (Copper Canyon Press, 2017),
[872] Stephanie Burt, 'Terror of Teeenage Life', *New York Times*, Sunday Book Review (2011), <https://www.nytimes.com/2011/07/03/books/review/book-review-the-raising-and-space-in-chains-by-laura-kasischke.html> [accessed 9 May 2018].
[873] Rob Stanton, 'Rob Stanton Reviews up to Speed, by Rae Armantrout', February 2004 (2004), <http://jacketmagazine.com/25/stan-arma.html> [accessed 12 March 2017].

Armantrout's poetry presents different moments of experience and language from scientific and poetic vision and uses metaphor to rearrange them in a Sapir-Whorfian approach that 'reformulat[es] something [to] transform the ways in which meanings may be made'.[874] Some of the more obvious routes for usefully interpreting Armantrout's poetry, such as cognitive poetics, do not, as Margaret H. Freemen notes, account for how the 'implicit mappings that readers adopt in drawing conclusions about the poems that are shared by many literary critics'[875] come about. This difficulty in explaining results makes it important to try and move past language when attempting to gain insight into, as Armantrout puts it, 'whatever the world throws at us'.[876] Armantrout's poetry offers the potential of finding ways to speak a foreign language, such as the language of science, without having prior learning and expertise in it—it creates 'oscillation' between scientific theory and poetic insight allowing the ideas behind each to become more accessible. The cognitive process of continually creating and breaking patterns helps gain an insight into the essence of whatever it is language is trying to describe and returns readers repeatedly to the beginning. It is the process rather than the conclusion that is important.

In Armantrout's poetry the place at which we start is known differently because a different self reaches it, a self that has been changed by a journey through language and experience. A self that will never reach the end of the journey and must continually travel it again and again, because Armantrout's poetic method represents a life's search for questions rather than answers. As Armantrout's interest in science began with religion, her poetic method has evolved along with theoretical physics as a type of 'science of the invisible, as a modern form of theology' where things 'strongly remind us of something real yet are nowhere to be seen; they emerge from a process of abstraction which stretches to the limit something we have long been familiar with', but that which remains invisible. This invisibility is also 'what makes [things] beautiful'[877] and provides a fertile source of inspiration for poetry and science.

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[874] Daniel Chandler, 'The Sapir-Whorf Hypothesis'.
[875] Freeman.
[876] Fitzgerald.
[877] G. Vignale, *The Beautiful Invisible: Creativity, Imagination, and Theoretical Physics*, (OUP Oxford, 2011), pp. 2–4.

Appendices

Appendix A

Metaphor Theory

Changing understandings of metaphor, relating to literality, related tropes, cognitive metaphorisation of language, and truth-bearing functions have impacted the arguments of each of these groups and can be considered alongside them. The following sections provide a brief profile of the main types of metaphor theory with critical arguments for each group.

Comparison Theories

Comparison theories see metaphor as a way of expressing likeness; an extended simile with the words 'like' or 'as' removed. A simple example can be given with the overused, but unambiguous metaphor: 'Juliet is the sun'.[878] According to the comparison theory the content of this metaphor is in fact Juliet is *like* the Sun. Comparison theories arose from classical interpretations of metaphor, which originated in the writings of Aristotle, and are often termed 'The Traditional Theory'. The most relevant accounts of the comparison theory come from Robert Fogelin and Severin Schroeder. Fogelin defends the view that metaphors are 'elliptical similes',[879] arguing that metaphor A is B means literally that A is like B and therefore is an ellipsis for a simile. Schroeder thinks that metaphors are nothing more than 'implicit comparisons'[880] accusing contemporary philosophers of rejecting it to keep up with accepted custom. The extended simile is the bedrock of the Traditional Theory, but ideas that similarity is essential in metaphor comprehension have been, and continue to be, vehemently rejected. The philosopher Donald Davidson made decisive arguments on why comparison theories can't be correct; Davidson argues that metaphors can't be comparisons because metaphors aren't trivially true whereas comparisons are 'trivially true'.[881] Monroe Beardsley and Richard Moran reject comparison theories on the basis of reversibility.

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[878] W. Shakespeare, *Romeo and Juliet*, (Cambridge University Press, 1839).
[879] R.J. Fogelin, *Figuratively Speaking: Revised Edition*, (Oxford University Press, USA, 2011).
[880] M. Siebel and M. Textor, *Semantik Und Ontologie: Beiträge Zur Philosophischen Forschung*, (De Gruyter, 2004), p. 100.
[881] Donald Davidson, 'What Metaphors Mean', *Critical Inquiry*, 5. 1 (1978), 31–47, (p. 42).

Beardsley uses I.A. Richards' tenor-vehicle[882] construction to argue that the 'flow of idiosyncratic imagery'[883] does not make sense when reversed. Correspondingly, Moran argues that if metaphor was akin to simile 'we should be able to reverse any of the parts without loss of change of meaning',[884] which he argues is not the case.

These arguments are made with the premise that metaphor is situated predominantly within imaginary and non-literal language; meaning that in order to process the metaphor there is 'an obligatory preliminary stage in which the literal meaning of the utterance is recovered before it is rejected in favour of the figurative meaning'.[885] Yet, as Fludernik, Freeman and Freeman point out, this position 'has come under increasing attack'[886] in the twentieth century. Psychology professor Raymond Gibbs argues that metaphor comprehension does not require any special linguistic or cognitive processes emphasising the 'ubiquity of figurative language in everyday communication and in legal and scientific reasoning and in myth and ritual'.[887] Research in cognitive linguistics has demonstrated that metaphor is prevalent in both literal and non-literal language and suggests that metaphor is capable of truth-bearing assertions; an important finding for comparison-based theories of metaphor, which still remains almost 'universally rejected'[888] within philosophy. The discovery also answers Davidson's influential argument, though the difficulties in creating dichotomy from figurative language and other types of language have been highlighted previously in Paul de Man's 'The Epistemology of Metaphor'.[889] De Man provides an analysis of Locke's and Kant's commentary noting that 'in each case it turns out to be impossible to maintain a clear line of distinction between rhetoric, abstraction, symbol and all other forms of language'.[890] De Man anticipates the move in contemporary metaphor theory, which 'diminish[es] the contrast between metaphor and similes'.[891] Metaphors are similes in so far as they are part of the same cognitive category; this returns us to the previous conception of metaphor offered by the

[882] Richards divided metaphor into tenor and vehicle: The tenor is the man subject and the vehicle is what the subject is compared to e.g. Juliet would be the constitutive tenor and the Sun would be the vehicle and carry ideas such as warmth to the new conception of Juliet. Therefore, an atypical phrase or word would be the vehicle, whilst the underlying theme to which it relates is designated as the tenor.
[883] M. Johnson, *Philosophical Perspectives on Metaphor*, (University of Minnesota Press, 1981), p. 107.
[884] Moran, p. 93.
[885] Diane Blakemore, *Journal of Linguistics*, 31. 2 (1995), 429–34, (p. 430).
[886] Fludernik, Freeman, and Freeman, p. 384.
[887] Blakemore, p. 430.
[888] J. Grant, *The Critical Imagination*, (OUP Oxford, 2013), p. 87.
[889] de Man; de Man.
[890] de Man, p. 28.
[891] Fludernik, Freeman, and Freeman, p. 385.

traditional theory and is one of the most important changes to occur in metaphor theory in the last century.

Interaction Theories

Theories that look at the relationship between the terms of the metaphor i.e. 'Juliet' and 'Sun' are labelled in literary criticism and philosophy as interaction or sense shift theories. The most influential theory of this type was proposed by Max Black. Black's Interaction theory argues that we observe and recognise associated commonplaces between terms and use a secondary subject to modify a primary subject. Black's theory uses I.A. Richards' structure for analysing metaphor and until recently these terms were part of the accepted vocabulary in literary analysis of contemporary metaphor; however, these have now been widely replaced in literary criticism with the terms, derived from cognitive linguistics, of *source domain* and *target domain*. Apart from a difference in terminology there is also a variation in direction, whereas Richards and Black use the vehicle to transport meaning to the tenor, the cognitive approach considers how the source can be *mapped* onto the target. One of the major instigators for this shift comes from new arguments about the non-literality of metaphor, as Gibbs argues some metaphors rely on implication complexes that can be taken as literal or metaphorical, but that the interaction theory 'assumes that each assertion is literal'.[892]

Despite these obstacles, recent study is now revisiting the transactional nature of Black's and Richards' model and Gibbs writes: 'new meanings are made possible by the interaction of terms in a metaphor and not as a result of either shifting attention to marginal aspects of meaning or highlighting accidental properties of things'.[893] Although Gibbs argues against the bidirectional mapping given by the interaction theory, which he recognises as 'the dominant theory in multidisciplinary metaphor theory',[894] he uses it as a foundation to point towards creating controlled meaning creation via the deliberate selection of terms.

[892] Gibbs, *The Poetics of Mind: Figurative Thought, Language, and Understanding*, p. 237.
[893] Raymond W. Gibbs, Jr., 'When Is Metaphor? The Idea of Understanding in Theories of Metaphor', *Poetics Today*, 13. 4 (1992), 575–606.
[894] Gibbs, *The Poetics of Mind: Figurative Thought, Language, and Understanding*.

Cognitive Metaphor Theory

The work of George Lakoff and Mark Johnson on conceptual metaphor gave rise to most cognitive based theories of metaphor; the effect their early work had on twentieth century metaphor criticism is undeniable and this contribution must be identified in the primary stages of any discussion of contemporary metaphor theory. However, their arguments were identifiable in other areas of cognitive science and philosophy prior to the publication of their book 'Metaphors We Live By';[895] Olaf Jakel's paper: 'Kant, Blumberg, Weinrich: Some Forgotten Contributions to the Cognitive Theory of Metaphor'[896] recognises that Kant's and Weinrich's discussions on the conceptual nature of metaphor left a lasting impression on cognitive theories of metaphor. Despite these prior markers, the current predominance of cognitive metaphor theory is largely due to their work and developing ideas of cognitive psychology and linguistics of how the brain actually functions.

Conceptual metaphor, as proposed by Lakoff and Johnson, provides the starting point for metaphor as a feature of embodied language, which has 'not only replaced anti-literal and literal conceptions of metaphor it has actually inverted the evaluation of these binary oppositions'.[897] According to cognitive science, embodied experience structures our language: 'reason is not disembodied, as the tradition has largely held, but arises from the nature of our brains, bodies, and bodily experience ... the very structure of reason itself comes from the details of our embodiment. The same neural and cognitive mechanisms that allow us to perceive and move around also create our conceptual systems and modes of reason'.[898] The embodiment of language is closely linked to Lakoff and Johnson's argument that 'the generalisations governing poetic metaphorical expressions are not in language, but in thought: they are general mappings across conceptual domains'. [899] Gibbs too asserts that 'research from historical linguistics [shows] that metaphoric thought plays a role in the historical evolution of what words and expressions mean'.[900]

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[895] Lakoff and Johnson.
[896] R.W. Gibbs and G. Steen, *Metaphor in Cognitive Linguistics: Selected Papers from the Fifth International Cognitive Linguistics Conference, Amsterdam, July 1997*, (J. Benjamins, 1999).
[897] Fludernik, Freeman, and Freeman, p. 385.
[898] G. Lakoff and M. Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*, (Basic Books, 1999), p. 4.
[899] Ortony, p. 202.
[900] Jr Gibbs, Raymond W., 'Cognitive Linguistics and Metaphor Research: Past Successes, Skeptical Questions, Future Challenges', *DELTA: Documentação de Estudos em Lingüística Teórica e Aplicada*, 22 (2006), 1–20.

Glossary of Terms

Conceptual Integration Networks: A dynamic, ubiquitous, and largely unconscious cognitive operation in which inferences, arguments, ideas and associations are blended into a separate blended space, which can modify the way we perceive and understand situations.

Higgs boson: An elementary particle according to the standard model, which unifies the weak and electromagnetic interactions.

Hyper-extended metaphor: The compression of different metaphorical associations into input mental spaces across poems in order to extend the target of a metaphor.

Imaginary Cosmopolitanism: The flawed idea that the Internet creates a global community rather than a network of individuals.

Input Mental Spaces: Small conceptual packets created through language and cognition for local understanding and action.

Interlanguage: A new system developed by a second language learner, which retains features of their first language whilst often overgeneralising features of the second language

Mirror Stage: An idea that relates to Jacques Lacan's account of the emergence of language at the point a child recognises his own reflection.

Network Theory of Meaning: The argument that the theoretical significance of any observation is dependent on a mutable system of meanings.

Poetic Interlanguage: A new system created by Armantrout's poetic use of scientific language. Under this system poetry is treated as the native language and science as the second language.

Sapir-Whorf Hypothesis: A controversial theory which argues that the encodings in the way we speak influences the way we perceive reality.

Standard Model: The basic theory of all forms matter, it also suggests that the Higgs field is made up of countless individual Higgs bosons.

Verfremdungseffek: A tool used by Bertolt Brecht in his political theatre to detach the audience so that they may consider the material more objectively.

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