“If Japan was a Person”. LX learning in Polly Barton’s Language Memoir 50 Sounds

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Abstract
The language memoir has informed a wealth of research on multilingualism. Polly Barton’s book 50 Sounds (2021), in which she narrates her experience of moving to Japan as part of the Japan Exchange and Teaching Programme, is another example of autobiographical writing with rich insight into LX learning. The article examines Barton’s exploration of relationships in and with an LX and reflects on the importance of transferential phenomena in LX acquisition. Parallels between LX and L1 learning during infancy are also investigated. The findings seem relevant for a psychodynamic understanding of LX learning that takes object relations into account and will hopefully result in more research.

Introduction
Researchers studying multilingualism and LX¹ acquisition have repeatedly found rich sources of information when turning to the autobiographical writing of multilingual authors. In the genre known as language memoir (Kaplan, 1994) (alternatively translingual memoir (Besemeres, 2006) or cross-cultural autobiography (Pavlenko, 2001)), the journey of learning and living in a new language and its impact on identity, relationships and emotional inner life are closely examined through the writers’ first-hand experience. Eva Hoffman’s Lost in Translation (1989) is an often-quoted classic of this tradition, which has generated a wealth of academic writing on the psychological effects of multilingualism (e.g., Burck, 2005; Carrá-Salsberg, 2017; Dewaele, 2010; Grosjean, 2012; Pavlenko, 2014). It has been argued that the analysis of these texts allows for a nuanced understanding that is hard to attain in more controlled studies, which seem unable to capture “what is going on inside the head of the person who suddenly finds herself passionately engaged in new sounds and a new voice” (Kaplan, 1994, p. 59). Looking at metaphors used by bilingual authors regarding their LX experience, Pavlenko (2006) lists a multitude of feelings she could gather from them:

[G]uilt over linguistic and ethnic disloyalties, insecurity over the legitimacy of a newly learned language, anxiety about the lack of wholesome oneness, angst over the inability to bring together one’s incommensurable worlds, and sadness and confusion caused by seeing oneself as divided, a self-in-between, a self in need of translation. (p. 21)

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¹ LX, a term suggested by Dewaele (2018), is defined as any foreign language acquired after the age at which the first language(s) (L1) was acquired to any level of proficiency.

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The analysis of autobiographical writings brings to light a wide range of complex feelings and concepts not only with the potential to teach us about multilingualism but more broadly about the relationship between language and emotions (Besemer, 2006). The findings can serve as a first exploratory investigation leading towards more systematic research.

Polly Barton’s *50 Sounds* (2021) is one of the more recent contributions to the genre of language memoir and centres around her experience of moving to a small Japanese island in her early twenties as part of the Japan Exchange and Teaching programme. In 50 chapters titled after Japanese onomatopoeias, which build the structure of the autobiographical essay, Barton offers her thoughtful reflections and sensory-rich associations to each of these expressions, creating a highly personal dictionary. She writes about the new relationships she builds in Japan, but most importantly about the passionate love affair she has with the language and her consuming determination to keep improving her Japanese.

Barton (2021) thinks of language as “a collection of people, real and fictional” (p. 341). The way relationships with external and internal figures mediate the acquisition and usage of an LX has not received much attention in psychodynamic research, with object-relational perspectives on the subject being surprisingly new and sparse. Most contributions build on the classic papers by Buxbaum (1949), Greenson (1950) and Krapf (1955), in which the usage of an LX in the clinical context is understood as a defence mechanism (Byford, 2015). Although it is a crucial observation, especially for clinical work, reducing the LX to a language of defence risks ignoring the rich, dynamic possibilities behind a person’s decision to learn and speak a new language (if it was a keep improving her Japanese).

To understand the effects LXs can have on a person’s psyche, social and cultural power relations also need to be taken into account. Fanon (1986) shows the alienation and splitting that black men from the Antilles suffered upon visiting the “motherland” France. The power structure implemented by colonisation perpetuates in beliefs and attitudes about language, with Creole being considered less sophisticated than French. The decision a black person from the Antilles would see themselves confronted with is to either speak French and “to stand with the white world” or to speak Creole and “to reject Europe” (p. 37). To side with French means to leave behind one’s cultural roots; to speak Creole means being perceived as inferior. Fanon reports how alienation, damaged friendships, and strained family relations result as a consequence of the language divide. He emphasises that this conflict is not caused by the dialect per se but that the historical context of colonisation gives it its meaning:

> It would seem, then, that the problem is this: In the Antilles, as in Brittany, there is a dialect and there is the French language. But this is false, for the Bretons do not consider themselves inferior to the French people. The Bretons have not been civilized by the white man. (p. 28)

In the context of colonisation, the rift caused by the languages and dialects of the coloniser and the colonised can cause alienation and feelings of denigration. In comparison, in a study that focuses on adult L1 English speakers based in Britain learning an LX for pleasure, it has been found that discovering new aspects of oneself through the LX can be a source of enjoyment.
and self-reinvention (Wilson, 2013). Of course, how the power dynamics behind language learning find its expression in the human psyche is mediated by the individual and their personal history (Stengel, 1939).

In more recent contributions, there has been an effort to understand how object relations and languages interact. Pérez Foster writes that “[w]ords are symbolic, object-relational capsules of the past” (1996, p. 108). She believes that with L1 or LX acquisition, the learner simultaneously internalises the voice of the other at the time, leading to different self-perceptions in different languages. Byford’s (2015) focus lies on how the LX serves a psychic function born out of the client’s object relations. Working with bilingual clients (English and German), she reports, for example, a client who uses her LX as a distancing device in response to a mother/daughter relationship that sees conflicts around spilling and containment. Her findings indicate that by trying to understand the unconscious reasons why a person learns and lives in an LX, the underlying psychic structures can be laid bare.

In 50 Sounds, Barton covers many subjects around (the Japanese) language and her experience of living abroad. For the purpose of this essay, I want to focus on extracts of her book, in which she sheds light on the unconscious dynamics of LX acquisition. The possibility that the relationship we have with a language is shaped by object relations and transference phenomena will be my focus of interest when exploring Barton’s text. I discuss how Barton perceives the learning process, her relationships in an LX and with her LX, and her observations on parallels between LX learning and infancy.

**LX and Infancy**

Disseverment is an inherent element to all language learning, including or especially one’s L1. Before infants utter their first words, they need to overcome the developmental task of recognising the (m)other as separate and of giving up the imaginary symbiosis with their environment. For Kristeva (2001), building on the theories of Melanie Klein, “[t]he loss of the mother – which for the imaginary is tantamount to the death of the mother – becomes the organising principle for the subject’s symbolic capacity” (pp. 129-130). While for Kristeva, individuation is achieved through imagined matricide, for Lacan (2003), the pre-social child-mother dyad is overcome via a third party, the symbolic father. In either theory, the symbolic order requires a separation from an imagined union with the mother, which for Amir (2014) is both driving motivation as well as an essential condition to speak. The learning process often coincides with the time the infant begins to walk – language becomes a tool to control the distance and detachment within a new spatial ability to join or separate from the object (Amati Mehler et al., 1990).

For the LX learner who has been speaking the language long enough to undergo a second socialisation, a further split takes place. It is a well-documented phenomenon that LX speakers can feel different in their respective languages and that memories, emotions and identities may vary with linguistic frameworks (Deweale & Nakano, 2013; Pavlenko, 2014). Barton moves to Japan aged 21 discovering her passion for Japanese that eventually will lead to a career as a literary translator. The more her Japanese improves, the more her previous monolingual worldview begins to disintegrate. “To imagine a language,” Barton (2021) realises, “means to imagine a life-form” (p. 166). That a speaker would be the same person in different languages, considering that norms, rules, social status, domains of experience and proficiencies within these languages are likely to be different, seems “plainly bizarre” (Barton, 2021, p. 166) to her. While for the monolingual, the degree to which language is formative to their identity is mostly

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invisible, Barton’s idea of her ‘me’ begins to shift from being shaped from the inside to being constructed from the outside. Barton is puzzled that concepts that make sense in one language feel odd when talked about in the other, making her at times feel like a hypocrite. Entering a new symbolic order through the worldview of the LX gives shape to a new identity that can be at odds with the old one.

During her linguistic journey, Barton notices how learning an LX can bring back the challenges one has to face as a baby. Describing her experience of attempting to communicate with others in Japanese, Barton (2021) draws comparisons with infancy, when the process of language learning occurs for the first time:

> It is the kind of learning that makes you think: this is what I must have experienced in infancy except I have forgotten it, and at times it occurs to you that you had forgotten it not just because you were too young when it happened, but because there is something so utterly destabilising about the experience that we as dignified, shame-fearing humans are destined to repress it. (p. 19)

Of course, the adult LX learner relies on textbooks and conscious memorising in a way neither possible nor necessary for the infant, but certain aspects of LX acquisition remain similar. In the paper *The Mother Tongue and The Mother* (1950), Greenson writes about his work with bilingual analysands, noting that while learning vocabulary and grammar are mainly cognitive processes, other facets like accent, tone, and rhythm need to be learnt by imitation. It is this part, “so intimately related to the earliest child-mother relationship” (p. 22), which he thinks is hardest for adults to achieve, believing that the early relationship to the mother might be a predictor for the child’s ability to learn a new language. Similarly, Barton (2021) describes an encounter with a translator colleague who is taken aback by Barton’s efforts to imitate the Japanese accent as closely as possible, but she understands why not everyone would be willing to undergo the process: “I knew full well that my accent had come from undergoing a second infancy, which had been-wracking, full of irritation, and necessitated making myself vulnerable” (p. 90).

Barton also observes a complex set of feelings she names Cultural King Baby syndrome. Encountering English loan words (termed *gairaigo*) in the script katakana, which is used mainly for the imported vocabulary of European languages (for example, *pain jūsu* for pineapple juice), Barton is bewildered at her strong response. The emotions range from initial titillation to feelings of outrage, anger, and exclusion; her Australian friend describes her reaction to hearing *gairaigo* as feeling like “you’re not with people who know you anymore” (Barton 2021, p. 104). Trying to understand what is so triggering about *gairaigo*, she contemplates whether it is the unpredictability that is hard for her and other L1 Anglophones to accept. Once integrated into Japanese culture, the English words begin a new life under different rules, resulting in T-shirt prints like “The favourite fruits is strawberry!” (Barton, 2021, p. 101). She thinks the response is “the tantrums of a child on whom the rules have changed unannounced” (Barton, 2021, p. 103). Sibling rivalry also plays a role: “It’s not a
dissimilar feeling to seeing your siblings getting away with transgressions that you did not. I wanted to lie on the floor, pummel my feet and scream” (Barton, 2021, p. 105).

Feelings of anger, exclusion, mistreatment – Barton shows how seeing an LX incorporate and alter L1 vocabulary can trigger intense feelings that potentially go back to our first language experiences, for example, the fear of not being understood or powerlessness at language rules one does not understand. Japanese gairaigo might be a quite specific language phenomenon. Still, Barton’s exploration of the emotional intensity shows how understanding feelings prompted by an LX might lead us to transference phenomena reaching back to a time when the learning process occurred for the very first time.

**Relationship in and with an LX**

When Barton moves to Japan at the age of 21, she soon meets and falls in love with Y, a Japanese man teaching English at the same school on a small island where she is placed via the teaching programme. Although the secret liaison with Y, who is twice Barton’s age and separated but married, ends when she decides to move to Tokyo, it is a formative experience for her, with Y continuing to occupy her thoughts for years to come. Barton scrutinises the relationship in her book from many angles, among other things trying to understand what it means for a couple to not share the same native tongue.

Especially at the beginning of a new relationship, couples with different L1s can experience some challenges. Dewaele and Salomidou (2017) have found that lexical and conceptual limitations in the LX and weaker emotional resonance of the LX can lead to a feeling of lack of genuineness at the start of the relationship. For the majority of the 429 participants who took part in the study, however, these initial obstacles faded in months (although couples for whom language differences turn out to be insurmountable might be less likely to participate in this kind of research as it might bring up painful memories). Which language a couple decides to use (e.g. one partner’s L1, both partners’ L1 or a lingua franca) can be the result of many factors, including the partners’ linguistic abilities, power relationships between linguistic and national groups, gender dynamics and the individual ways these are mediated by personal beliefs, with many couples developing their own unique way of communicating (Piller, 2002).

Y and Barton both speak the L1 of the other, although “with limited abilities” (Barton, 2021, p. 153). In the quest to understand each other, Y and Barton’s evenings often revolve around her electronic dictionary. She recalls misunderstandings and discomfort (later growing into enjoyable experimentation) regarding Japanese versus British English bedroom talk. To bridge the linguistic gap, they develop their own unique mixture of Japanese grammar and English vocabulary, a language that to her feels highly personal and intimate, “like a house we had built ourselves” (Barton, 2021, p. 153). The language differences inevitably shape the relationship in both uniting and dividing ways and cause dynamics that might be less pronounced in monolingual couples. This becomes particularly evident when Barton describes falling in love with someone in another culture as finding a “language parent” (Barton, 2021, p. 138). Just as the infant relies on their parents to acquire language, she finds herself relying on Y, with, she writes, the same intensity and the same need for approval. However, like the child who eventually transgresses with their parents, she slowly begins to test the waters with Y. Barton narrates how one evening she asks Y about the personal pronoun kimi, which, as she had read in a book that day, can be used by older men to address subordinates or younger men, or by men to address women. Although she senses that Y would not appreciate being called kimi by her, she tries and, as expected, is told by Y that it is not appropriate. A few days later, she tries
using *kimi* again and receives a strong response: “And I see it in his eyes, the genuine outrage and anger. It takes me back to transgressing in front of my own father as a child […]” (Barton, 2021, p. 138).

Y adopts the paternal role of passing on social rules, representing the father of the past and the social norms of Japan’s presence. Provoking Y helps Barton to become an adult member of this society; seeing the outrage and anger in Y’s eyes turns the vague suspicion she had about personal pronouns into certainty. Barton (2021) calls her desire to transgress in Japanese her “linguistic adolescence” (p. 140). The romantic relationship becomes a playground in which the linguistic developmental stages of infancy and adolescence are lived out. The partner, the parent and the LX become intermingled in fantasy; Barton (2021) even has the sense that Y is “the symbolic order itself” (p.161).

When Barton (2021), for the first time, becomes aware of her attraction towards Y, she has no doubt that the affection is for him, but:

[I]t’s also inseparably, affection for this language he speaks, this form of life which I feel through him. [...] This is the first time of heavens knows how many to come when I will notice this inextricable commingling of person and language, this affection which can’t decide which one of the two it’s bonded with. (p. 95)

The desire to learn the language and the desire for the person become indistinguishable. Kaplan’s language memoir *French Lessons* (2018) offers another example in which the affection for a lover and their L1 are strongly interlaced. Kaplan (L1 English) recollects a turbulent relationship with André (L1 French) who she, although that as a boyfriend he leaves a lot to be desired, is willing to put up with for his French words:

What I wanted more than anything, more than André even, was to make those sounds, which were the true sounds of being French, and so even as he was insulting me and discounting my passion with a vocabulary lesson, I was listening and studying and recording his response. (p. 86)

Not only does she want to learn from him, she wants to *be* him: “I wanted to crawl into his skin, live in his body, be him. The words he used to talk to me, I wanted to use back. I wanted them to be my words” (Kaplan, 2018, p. 88). Barton (2021) displays a similarly intense desire to become one with the language. When she begins to tackle the alphabetic systems hiragana and katakana, she finds herself in the grip of an obsession: “I wanted those shapes to be a part of me, so much I could scarcely bear it. I wanted to possess them, with a mighty avarice” (p. 121). Barton (2021) asks herself whether she unwittingly, “almost as if through biological reflex” (p. 139), had chosen a partner who would help her to acquire fluency in Japanese. This seems a crucial realisation as should this be the case the Japanese language replaces Y as the

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desired object. It also raises the question if, instead of Y, there is a different, an unconscious interlocuter that motivates the laborious process of learning an LX. Indeed, when introduced to attachment theory in personal therapy, Barton (2021) comes to the realisation that she has an attachment to Japan as if it were a person and that the patterns she shows with real people are mirrored in her relationship with the country.

[I]f Japan was a person, it would be a male, and it would be avoidant. Japan would be a composed, impassive man, inarticulate and secretive about his feelings. […] It came to me that the rapport Japan and I had could be boiled down to the linear, repetitive dynamic as attachment theory described it: me returning, time and time again, like a wave washing up to shore, for comfort that I was barred from receiving. (p. 232)

And three pages later:

I have failed. I have failed to make them adore me. I say to myself that I will go back,

I will learn Japanese properly. (p. 235)

Barton’s drive to learn Japanese seems partly aimed at an unconscious, aloof figure, transferred onto the country Japan, from whom she hopes to receive acceptance and comfort. The effort that goes into language learning is rewarded with conditional love. Kitron (1992) uses the term “language-object” to suggest that language is an emotionally cathetered object. Barton’s reflections show that language can also be understood as an object that is integrated into unconscious fantasies. In these fantasies, the speaker of a language, like Y, can stand for the whole community of Japanese speakers; vice versa Barton (2021) finds herself in a “pseudo-romantic relationship with Japan” (p. 178). Taking this unconscious dynamic into account provides a possible explanation for what Barton (2021) describes as a “strange determination to keep improving my Japanese, which seemed less a conscious choice and more something that consumed me” (p. 238). It seems that two unattainable men feature in her life, Y (who is separated but married) and an unconscious internal figure, imagined as an unavailable country.

(The fear of) rejection is a recurring theme in Barton’s relationships and an ongoing concern regarding the Japanese language. Y is unavailable to her as an older, technically still married man whose position as a teacher would not allow for the relationship with Barton ever to become public. S, a woman Barton dates for a while, is out of touch with her feelings and emotionally unavailable; when Barton shares with her that her mother had been hospitalised, S shows more interest in the workings of the NHS than in the emotional significance of the event. When Barton tries to picture S as a child, she imagines a tomboy who would not have shown the slightest interest in her. Barton (2021) is aware of a pattern: “I’d always known that I’d been attracted to emotionally inarticulate people who lapsed into a kind of distance and coldness that drove me wild” (p. 231).
50 Sounds (2021) covers a decade or so of language learning. Throughout, even when Barton begins to use her Japanese skills professionally, she sees a gap lying between her and the Japanese language. Barton describes her battle with Japanese as an ever-enduring dance between belonging and exclusion, acceptance and rejection. For her, fluency is not a secure achievement but a precarious state in which one is constantly challenged and about to be found out. She feels suspicious eyes on her waiting for her to stumble and to lose her status as a fluent speaker. One mistake means exclusion from the community who she does not feel fully part of. Instead, she pictures her position as being by a gate – sometimes standing on the inside and sometimes on the outside:

I stand by its posts, passing in and out momentarily, variously welcomed, frowned at, and ousted by its keepers. Even when I’m inside, I’m perceptually aware how quickly I could again be pushed out, that I could find some basic item inexplicably missing from my knowledge. (Barton, 2021, p. 23)

Not knowing, not passing the perpetual test of being a fluent speaker means expulsion. Aiming for LX perfection serves the purpose of gaining acceptance; language learning exposes her “always-bruised but ever-renewing desire to draw close to a person, a territory, a culture, an idea, an indefinable feeling” (Barton, 2021, p. 23). Ironically, the closer to Japanese culture she gets, the less she fulfils the expectations of her environment. As a white, L1 English speaking foreigner, she is simultaneously adored and objectified: “[Japan] needs you to be on the outside. It requires your alienation in order to better admire you (Barton, 2021, p. 183).

The fate of the LX learner is similar to an asymptote never reaching zero – the distance becomes smaller, but it remains. Thus, the feeling of reaching for perfection, yearning for union and acceptance from an idealised object can be stretched out infinitely. Because learning an LX is a process that is never complete, it can become a strategy to remain on the threshold between distance and closeness, in which one can dream about union with the object without this ever being realised. Describing her experience in the third person, she says:

She feels as though she’s perched on the edge of a world, and what she wants more than anything is for that world to take her into itself. This perpetually renewed lack is like being suspended, acrobatic, mid-air, in the act of reaching towards something which lies just beyond grasp. (Barton, 2021, p. 109)

Barton conveys something inherently frustrating and tantalising about the process of language learning – a perpetual never-quite-getting-there. The gap that lies between the student and the LX is not only an inevitable characteristic of the process; being out of reach is also what makes it so beguiling. Reflecting on why she had not used the opportunity to learn Japanese when it was offered at her senior school, Barton realises that the classes which offered fun and accessible activities had no appeal to her. She did not want the Japan that reached out its arms

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in welcome: “[T]he Japan I wanted didn’t want me” (Barton, 2021, p. 44). To understand the allure of distance, Barton turns to the essay *Eros, the Bittersweet* (1986), in which Anne Carson explores space or distance as a crucial element in erotic relationships. If there is no space that separates the lovers that they wish to overcome, there is no desire. Similarly, the language learning process is fuelled by a yearning to overcome what one separates from perfection. Thus, distance is not a side effect but a crucial ingredient for Barton’s passion for LX learning. She believes that if familiarity sets in, one might be rewarded with comfort, but the desire is gone.

50 *Sounds* (2021) does not discuss many childhood memories, but Barton mentions in a short paragraph the emotional pressure that had followed her parents’ divorce when she was young: “[T]hroughout it all, I carried the sense that it was my job to make sure that things didn’t fall apart entirely” (p. 314). It is impossible to deduce from that short passage what Barton made of the event and how it has affected her in her later life. What transpires in her memoir is that she perpetually finds herself inhabiting in-between spaces, sometimes with difficulty, but moving from her 20s into her 30s increasingly with pleasure. “Being between cultures”, she notices, “does not always mean the happy versatile figure who could switch at will, but the person who felt fundamentally other wherever they were. […] I was someone bobbing helplessly on the sea.” (p. 288). Throughout the book, Barton undergoes considerable personal growth. While her younger self is preoccupied to adapt to others’ expectations, she begins to take her wishes for safety and emotional connection seriously. As a translator, Barton (2021) chooses a career that places her into the in-between, but she begins to find a groundedness within it. Barton finds a place for herself between languages and cultures: “a big, small, crazy dwelling, in which I don’t just work but also live” (p. 347).

**Conclusion**

In recent years, the importance of integrating the language history of linguistically diverse clients into psychotherapeutic practice has been receiving increasing attention (e.g., Pérez Foster, 1998; Costa, 2020). Like previous language memoirs, 50 *Sounds* contains many insights that cast light on the psychological effects of multilingualism that can be useful for the clinic. Although the memoir mainly covers Barton’s 20s and early 30s and omits childhood memories, through her highly self-aware observations, the book offers a window into the dynamics of LX learning.

Entering the symbolic order, the infant separates from the imagined union with the mother. For the LX learner, new splits and clefts occur, for example, through the emergence of new language identities or between one’s actual and ideal LX abilities. The severances are inherent in the process, but how the individual responds to them can help to understand how they relate to other objects. Barton shows varied feelings about the distance that she sees between herself and the Japanese language. Anxieties around exclusion and rejection occur, in a similar way, as in her romantic relationships with Y and S. On the other hand, the gap seems to fuel her desire and make the object more attractive. Being in-between cultures and languages is a place Barton inhabits with varying emotions. Through finding peace with her personal needs, the state changes from causing feelings of helplessness to becoming a place of safety.

Throughout her book, Barton explores the dynamics of relationships in an LX and, conversely, uncovers unconscious internal figures underlying her effort to learn Japanese. In her romantic relationship with Y, she observes how affection for language, land and person can interweave to the degree of becoming indistinguishable and how in entering a linguistic infancy and adolescence, the partner and parent get intermingled in fantasy too. Through personal therapy,
Barton makes the fascinating discovery that her attachment style does not only affect her relationships with people but also her imagined relationship with Japan. Learning an LX and later becoming a translator allows her to remain in a perpetual in-between state, yearning for closeness but maintaining distance, similar to her romantic relationships. While there has been evidence that the assessment of the internal working model of attachment might vary depending on in which language the assessment was conducted (Veneta et al., 2017), Barton’s observations indicate that understanding the attachment with the language-object might be able to yield information about unconscious relationship dynamics. Her insightful examination of LX learning seems relevant for everyone working with multilingual clients and will hopefully influence further studies in the future and find application in the clinic.

References


