

Implementing Critical Adoption Studies in HCI: Proposing a Framework to Explore the Power and Social Structures that Shape the Technologies Aimed at Transnational Adoptees

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MSc Thesis

Media Technology MSc Programme
Leiden University

June 2024

Abstract

The HCI field is in an ongoing process of making technologies, research, and design more inclusive, diverse, and sensitive for various marginalised communities. One community that has not been addressed in the discourse are transnational adoptees. This study aims to contribute to the inclusivity and diversity effort of the HCI field by implementing a sensitivity towards the complex and lived experience of individuals involved in transnational adoption. It proposes a critical adoption studies (CAS) framework that can be implemented in the field of human-computer interaction (HCI) to analyse in what way technologies aimed at transnational adoptees are situated by power and social structures that surround transnational adoption. The CAS framework is tested on two case studies. The results of these case studies show that the framework can analyse underlying power and social structures in technologies and that it can be used to showcase power imbalances between actors and stereotypical portrayals of transnational adoption, adoptees and first parents. This contributes to a deeper understanding of not only how harmful dynamics are replicated in technologies for adoptees, but also contributes to the critical discussion of power and social structures surrounding the HCI field. Additionally, the framework has the potential to reveal design improvements to address power dynamics, with the possibility of centring the interest of specific actors and counter stereotypical portrayal of transnational adoption. It encourages the development of more inclusive and ‘transnational adoption sensitive’ designs that better serve the needs of the adoption community.

Introduction

Professionals within the Human-computer interaction (HCI) field are becoming more aware of the power dynamics and inequalities within its domain that have historically led to approaches, designs, and technologies that excluded and marginalised certain groups and communities. To make the field more inclusive and diverse, critical theories such as feminist theory (Bardzell & Bardzell, 2011), decolonial theory (Schultz, 2018; Lazem et al., 2022; Escobar et al., 2018), critical race theory (Ogbonnaya-Ogburu et al., 2020), and post-colonial theory (Irani et al., 2010) have been used to reconsider – and ‘delink’ – current practices from harmful power and social structures. Critical HCI scholars advocate the incorporation of multifaceted perspectives, particularly those from non-Western cultures and marginalised communities.

Despite these ongoing efforts, one community that has remained overlooked is transnational adoptees. It is estimated that there are over one million transnational adoptees globally. However, the complex experience of adoptees is often misunderstood. Additionally, the context of adoptees which include the power structures and social structures is not addressed. Including the inherent global inequalities between countries, actors, and institutes which create power dynamics unique to the context of transnational adoption. Moreover the biases, assumptions, beliefs, and norms surrounding transnational adoption and stereotypical portrayals of the individuals involved, ie. social structures. The socio-political dynamics of transnational adoption are reproduced in HCI practices aimed at transnational adoptees, thereby negatively affecting the very community that HCI scholars and professionals want to support, and centre in their technologies.

Therefore, this study proposes a critical adoption studies (CAS) theoretical framework for social technologies aimed at transnational adoptees. The framework will be tested on two technologies to validate its approach. By introducing this framework, this study hopes to shed light on the social and power structures that surround transnational adoption and how that influences the resulting HCI technologies. The framework offers the field a lens to observe these harmful structures in this specific context, and contributes to the critical discourse of HCI. This study aims to improve technologies, design, and research practices by implementing a sensitivity towards the complex and lived experience of individuals involved in transnational adoption. As a result, this study assists the HCI field in fostering technologies that embody a pluriverse design and make a positive impact on marginalised communities.

This paper begins with a literature review that outlines the relevant paradigm shifts in the field of HCI, and introduces the contribution of critical theory and the CAS field to the framework. In section two, the method for testing the framework and the two case studies are explained, and in section three, the CAS framework is described. This is followed by the results of the two case studies and the results of the framework. In section five, the discussion will be outlined, and finally the findings of this paper are summarised in the conclusion.

1. Literature Review

To understand the background and context of this research, an overview of the Human-computer interaction (HCI) field and its relevant paradigm shifts are described. Additionally, the impact of critical HCI studies and its discourse are explained; the critical adoption studies (CAS) field is similarly introduced.

Human-computer interaction

The field of human-computer interaction (HCI) focuses on the relationship between the user and technology. HCI has always critically assessed its approaches and frameworks, witnessing several paradigm shifts. In the 1980s, the field expanded its scope from beyond solving technical problems, to incorporating the broader context of the usage of technology. They acknowledged the human factors of the user and their influence on the interaction with the technology. At that time, the main goal was to optimize the relationship between humans and machines, also known as *man-machine coupling*. (Suchman, 1987; Winograd & Flores, 1987). This evolution progressed further in the 1990s as classical cognitivism and information processes dominated the field. It was assumed that the human information process and cognition can be adapted and modelled in a way that is similar to that of a computer. By modelling both the state of the computer state and that of the user, it would become easier to detect issues in the information process and improve the interaction between humans and computers (Suchman, 1993; Thomas, 1995).

Over the past decades, the field of HCI has experienced a notable shift, acknowledging that human perception, interaction, and navigation of the world are greatly shaped by both physical and social contexts. Therefore, understanding the user from their point of view: considering the knowledge users have of themselves, of their understanding of the world, and of their cultural and economic position has become central in the field. Harrison et al. (2011), call this the third paradigm, where the phenomenological situatedness of users, designers, and researchers have taken a central position in the field. Where before, the user was seen as a cognitive process that could be represented through a general model. In the new paradigm, users and technology are seen as actors that are influenced and shaped by their physical and social world, and this should be taken into consideration when researchers and designers are developing technologies. Harrison describes approaches such as participatory design, value-sensitive design, and user experience design emerged, which consider the situated knowledge of users and how this impacts the interaction with the technology. In this new paradigm, the field considers the emotional, embodied, and cultural dimensions of human-technology interaction. The focus of research is understanding the context in which technology is used; the values that shape these interactions; the specific situations or environments in which technology is employed; and the process through which individuals derive meaning from their interactions with technology.

Critical human-computer interaction

By placing greater emphasis on the social, cultural, and physical context of users and technology, the third paradigm paved the way for the integration of critical theory into HCI. Critical theory examines and challenges existing structures, dynamics, social norms, values, and assumptions within society. The HCI field has recognized that social, economic, political, cultural and power structures impact the human experience and human-computer interaction. The field has used critical theory to understand how users and technology are situated by these dynamics.

Irani et al. (2010), introduced the concept of postcolonial computing as a strategy for addressing HCI design in cross-cultural settings, in particular for the Global South. It addresses the lack of sensitivity to cross-cultural differences and the failure to critically examine power dynamics when interacting with users from regions that were formerly colonised. Irani and her colleagues showed that when HCI professionals design for people with different cultural backgrounds from their own, aspects of their dominant culture are incorporated into the design process and technology. Given that HCI professionals and users come from diverse backgrounds with potentially differing cultural values, this might result in clashes in the design, and research approaches and technology. Post-colonial computing has made the HCI field aware that designers and researchers are situated in a cultural and power-laden context, therefore the resulting approaches, research, design, and digital product are cultural and power-laden. This has made HCI scholars aware of their own positionality and intersection with social and power structures, and how these are potentially intertwined with the approaches they use in research and design.

HCI scholars who adopted a decolonial perspective describe that postcolonial computing overemphasised cultural concerns and does not address the importance of political, economic and racial issues. Ali (2014) proposes to overcome these issues by implementing a decolonial approach. That is not centred on European perspectives. This involves incorporating the viewpoints and local knowledge of marginalised communities.

Ogbonnaya-Ogburu et al. (2020) have implemented this decolonial perspective, as they use storytelling to illustrate how racism in the field of HCI affects HCI approaches, research, and design. They have adapted critical race theory for HCI and created a theoretical foundation for race-conscious efforts in the field. Additionally, they describe proactive measures that can be used in HCI to battle racist ideology. Ogbonnaya-Ogburu et al, describe that ‘racism is pervasive in the socio-technical system, the HCI community and the broader technology industry.’

Scholars (Schultz et al., 2018; Escobar et al., 2018; Cunningham et al., 2023) argue that in the modern Western world, there is a tendency to perceive and interpret the world through ontological dualism, where aspects of reality are categorised into opposing pairs, such as mind/body, subject/object, nature /culture, and man/woman. This binary thinking often leads to the marginalisation and devaluation of certain subjectivities and epistemic approaches that do not fit into these dichotomies. A decolonial approach to design aims to challenge and ‘delink’ these. It seeks to deconstruct the binary logic that

reinforces power imbalances and exclusionary practices, by recognizing the complexity and diversity of human experiences, epistemologies, and cultural traditions. Garcia et al. (2021) have implemented this decolonial approach in HCI. Their paper describes five decolonial pathways for the field to generate knowledge from marginalised communities without ‘othering’ them. These pathways offer HCI researchers and designers a framework to investigate the spaces of socio-technical research and learning they inhabit, and their practices. Several studies further incorporate decolonial theory in HCI (Bidwell et al., 2016; Pendse et al., 2022; Lazem et al., 2021).

Pluriverse design

Escobar (2018) introduced the concept of pluriverse design which aims to accommodate multiple world views and perspectives. A pluriverse world is a world where many worlds fit. Escobar argues for a design that is user-centred, situated, interactive, collaborative, and participatory; contributing to the understanding of the production of human experience and life itself. A decolonial approach to design aims to deconstruct the binary logic that reinforces power imbalances and exclusionary practices, by recognizing the complexity and diversity of human experiences, epistemologies, and cultural traditions. In other words, it is the redesigning of the ontological and epistemological practices in HCI and delinking it from the euro-centric view so that other practices, approaches and perspectives are incorporated.

This pluriverse approach has been incorporated into the HCI field (Escobar et al., 2021; Smith 2021; Wong-Villacres, 2021). Existing approaches in HCI are adapted or expanded to incorporate other individuals’ perspectives and approaches. For example, Smith (2020) explored how participatory design, a technique to co-design and involve the user group in the design process, is culturally and racially situated and its interconnectedness with Western ontologies. Another example is the research of Bardzell & Bardzell (2011), where they examined the incorporation of feminist theory and social science methodologies into HCI. It examines the origins of feminism and social science and explores how these approaches and perspectives can complement and be integrated with HCI epistemology. As well as for To et al. (2023), who re-examined the solution-based approach in HCI, where problems and struggles are sought in target groups, and these problems are used as an opportunity to come up with solutions that can be formulated as digital products. To et al. (2023), describe that this deficit and damage-centred approach can be harmful, especially for people of colour, since it centres the traumatic racial experience of an individual and solely views them through their trauma.

Despite the critical theories’ contribution to making the field more inclusive and diverse, the field is still in the ongoing process of translating these new perspectives and concepts in research and design for HCI. Smith (2021) notes that concrete design principles and approaches for pluriverse design are still in progress in the field.

Critical adoption studies

In the early 2000s, Critical adoption studies (CAS) emerged from within the field of adoption studies (Homans, 2018). The adoption field was primarily led by scholars from disciplines such as psychiatry, social work, and psychology. These studies focused on examining the adoption family, the adjustment of the adoptee, and how social workers and other professionals in the field could help these families. However, these disciplines often fell short of adequately addressing the intricate complexities and inherent inequalities within adoption. As Myers (2008) explains, transnational adoption was solely viewed as a type of humanitarian aid and a solution for social welfare problems. The disciplines would not incorporate the perspectives of adult adoptees and overlook economic and social structures that were inherent in transnational adoption.

The CAS field moves away from the simplistic lens that adoption is a ‘win-win’ situation. CAS examines the underlying context of adoption and considers the historical, political, social, and economic interests that reside in transnational adoption. CAS consists of various academic disciplines including history, anthropology, literary studies, philosophy, and sociology. The field builds upon the general work of the disciplines in adoption studies and recognizes that adoption is multifaceted and deeply intertwined with broader social, cultural, and power dynamics. CAS is a multidisciplinary and interdisciplinary field and considers various methods for studying and practising adoption studies, thereby also acknowledging the value of the lived experience and perspectives of adoptees and first parents. For example, the intersectional book ‘Outsiders Within’, by Trenka et al. (2006), was groundbreaking for the field of adoption and CAS, as it describes how different social structures affect the lives of adoptees. Many scholars in CAS are transnational adoptees themselves, marking a departure from the adoption field's historical dominance by adoption professionals and adoptive parents. Consequently, this can make scholars in CAS situated within the realms of personal and political.

Critical human-computer interaction I & critical adoption studies

Both CAS and critical HCI fall under the umbrella of critical studies, sharing a common focus on critiquing prevailing dynamics and structures. While Critical HCI examines these structures relating to technologies, users, and their interaction, CAS addresses the context of transnational adoption. The adoption community, similar to other marginalised communities, benefit from the critical discourse and ‘delinking’ process of HCI, which fosters the creation of ‘worlds within worlds’ in technology (Escobar, 2018). However, the current critical discourse in HCI has not implemented the critical perspectives of CAS and transnational adoptees. It fails to address the power dynamics and social structures inherent in transnational adoption and its intersection with technologies aimed at adoptees. Historical, political, social, and economic contexts specific to transnational adoption are missing in the discourse. Additionally, the inherent global inequalities between countries, actors, and institutes creates power structures. The biases, assumptions, beliefs, and norms surrounding transnational adoption create stereotypical portrayals of the individuals involved, ie. social structures. The integration of CAS theory into critical HCI could provide greater insight and a deeper understanding of the ‘world’ of adoptees

and the adoption community. This study hopes to contribute to the critical discourse and overall diversity and inclusivity efforts of the field, that foster technologies that inhabit ‘world within worlds’.

2. Method

In order to propose a CAS framework for analysing social technologies in HCI, it is necessary to perform a synthesis of the CAS literature from a critical HCI perspective. As critical HCI is about the incorporating different perspectives and experiences of communities, it is paramount that the power and social structures experienced by these communities as well as their context is understood. For the community of transnational adoptees, this means that the structures and context relevant to their experience must be understood. Based on a critical HCI analysis, the following five categories relevant to the community of transnational adoptees have been identified, and will be discussed: the power structures surrounding transnational adoption, for example the political, colonial and racial structures; the social structures, including the assumptions, biases, and beliefs about transnational adoption; the first parents, which includes literature about the first parents’ perspective and experience and their position in the adoption system; the adoptee, which includes the experience and perspective of the adoptee and how they are positioned in these power and social structures in transnational adoption; and the adoptive parents, meaning the position and perspective of the adoptive parents in the context of transnational adoption. These five categories are a guideline for the literature synthesis which makes up the basis of the CAS framework for analysing social technologies in HCI.

After the framework is constructed, it is tested on two case studies to explore whether it can analyse the power and social structures in social technologies aimed at transnational adoptees. During the testing of the case studies, a set of situations are outlined that will later be used to benchmark shortcomings of the framework. The following situations will be documented when encountered during the application of the framework:

- Situations when an element struggles to fit into the matrix framework.
- Situations when an element only partially fits in the matrix framework.
- Situations when an element remains unaddressed within the matrix framework.

These encounters and the results of the case studies will be analysed and reflected upon to showcase whether the framework can analyse the power and social structures in social technologies aimed at transnational adoptees.

Case studies

The case studies on which the framework will be tested will be two technologies: the website of INEA, a digital platform of the Dutch Expertise Centre for transnational adoptees; and the heritage travel website, Lotus Tours. INEA was established in 2023 on the recommendation of the Joustra research committee (Joustra, 2021), whose conclusions have shown the Dutch government to have failed to take appropriate action to prevent malpractices in the transnational adoption system. INEA describes

themselves as an expertise centre for everyone who has questions about their identity, post-adoption care, and other issues related to transnational adoption. Lotus Tours is a website where adoptees and adoptive families can inform about and book trips to the adoptee's country of origin, this is also known as a so-called 'roots trip' or 'heritage tour'. The founders of Lotus Tours are two adoptive mothers.

Both these case studies were chosen because adoptees are their main target audience and user. Furthermore, the cases were selected based on the different actors involved, namely, the government and adoption agencies are prominent actors in the case study of INEA, but they are not present as actors in the case of Lotus Tours. These variations in the actor's involvement and the context have the potential to show how the framework is applied in different situations, with respect to different interests and actors.

One limitation of these case studies, however, is that both technologies are website-based. There do exist social technologies for adoptees that go beyond websites. Examples include project Synergy whose aim it is to help adoptees reconnect with their country of origin; or Tody's Baby Book, an interactive baby book product that tries to capture the first few thousand days of the adopted child. However, all these technologies were created almost 10 years ago and have not been updated or further developed as of date of research. Current versions of mobile operating systems such as Android and iOS do not support these apps, which unfortunately makes them inaccessible for analysis. Place and location have also limited the choice of the case studies. As this research takes place in the Netherlands, it is restricted to technologies present in the Netherlands or technologies that are accessible in the Netherlands through the internet or mobile apps.

3. CAS Framework for Analysing Technologies in HCI

The purpose of the critical adoption studies (CAS) framework is to analyse the social and power structures inherent in technologies related to transnational adoption. The framework is built up from two parts as shown in figure 1, a power structure lens, and a social structure lens. The two parts are both accompanied by and based on synthesised theory from the CAS field that explain key concepts, context, and perspectives from the field, which gives HCI scholars the necessary background information about transnational adoption to use the framework on technologies.

Part 1: Power structure lens

Step 1: Who is involved?

Step 2: Context & Interest

Step 3: Mapping out the interest on the components

Actor	Context	Interest	Design	Language & Discourse

Part 2: Social structure lens

Actor	Context	Interest	Design	Language & Discourse

Figure 1: CAS framework matrix

Part 1: Power structure lens

The first part of the framework focuses on the power dynamics and structures that might reside in the technology. The power structure lens focuses on the different actors involved in the technology, which position they inhabit and how their interests are represented in the technology. The first step of this framework is to indicate which actors are involved in the technology. Actors can include user groups, target groups, stake stakeholders, institutes and other individuals or organisations involved in the creation, and interest of the technology. Examples include: adoptees, adoptive parents, first parents, the government, adoption agencies, and non-profit organisations. The actors are written down in section A, see figure 2. The second step is to identify these actors' interests and context in the technology. Why are they involved? How and which interests do they possess? These are written down in section B. The *key* interests are identified and written down in section C. In step three, the interests of those actors are mapped out to components of the technology, see section D. The components are:

- Function & use, which include the interaction, functionality, usage, and options in the technology;
- Technology, which encompasses the material, hardware, non-digital components of the technology that are needed to access and use the technology;
- Design, including the interface, style, symbols, metaphors, colours, and graphics that are used; and lastly,
- Language & discourse, including the text, concepts, framing, and language that is used.

The interests of the actors are mapped out to the components to examine in which way these actors' interests are expressed through these components. For example, if there is an actor with a financial and political interest, how are these represented in the components of function & use, technology, design, and language & discourse? These observations are then written down in the matrix.

Part 1: Power structure lens

Step 1: Who is involved? A

Actor 1: _____

Actor 2: _____

Actor 3: _____

Actor 4: _____

Actor 5: _____

Step 2: Context & interest B

Context 1	Context 2	Context 3	Context 4	Context 5

Step 3: mapping out the interest on the components C

	Function & use <small>How the function is used and how it is used in the technology. How the function is used in the technology. How the function is used in the technology.</small>	Technology <small>How the technology is used and how it is used in the technology. How the technology is used in the technology. How the technology is used in the technology.</small>	Design <small>How the design is used and how it is used in the technology. How the design is used in the technology. How the design is used in the technology.</small>	Language & discourse <small>How the language is used and how it is used in the technology. How the language is used in the technology. How the language is used in the technology.</small>
Actor 1 and their interests: • • •				
Actor 2 and their interests: • • •				
Actor 3 and their interests: • • •				
Actor 4 and their interests: • • •				
Actor 5 and their interests: • • •				
Actor 6 and their interests: • • •				

Figure 2: CAS framework, part 1: power structure lens with annotations.

Part 1: Accompanying theory for power structures

It is necessary to have a foundation of knowledge about the existing power structures, actors, and their interests that reside in the transnational adoption system and broader context, if one were to apply the power structure lens to a technology aimed at adoptees and analyse power structures related to transnational adoption in the technology. The following theory is synthesised from CAS literature and aims to give this foundation. It is important to mention that the following theory is not a literature review of the entire CAS field but a synthesised one, that is only relevant to HCI and the application of the framework. The following theory is extensive, but not exhaustive.

What is transnational adoption?

Transnational adoption is the process of children migrating from countries in the Global South to Western countries. Where they are placed in predominantly white middle-class families. Homes et al. (2018) argue that transnational adoption can best be seen as social, legal, political and economic practices that involve moving children and infants from one social location to another, crossing cultures, races, ethnicities, and religions. The practice of transnational adoption originated as a rescue mission and humanitarian aid in the aftermath of the Korean War. This pattern is also observed in other countries that started transnational adoption. This trend to save children in countries that experience vulnerable

situations due to war, poverty, natural disasters and other dire circumstances, is observed in other sending countries that are involved in transnational adoption.

Over time, transnational adoption has evolved into a solution for infertile couples to fulfil their wish to have children. It is estimated that globally, more than one million children have been transnationally adopted (Selman, 2020). There has been a consistent increase in transnational adoption since the 1950s, and it is estimated that globally, 45,000 children were adopted transnationally per year. Between 2004 and 2007, this trend has declined by 17 percent. This decline in transnational adoption can be attributed to the ratification of the Hague Adoption Convention with its purpose of regulating transnational adoption, preventing malpractice and fostering cooperation with the sending and receiving countries (Cantwell, 2017). Another reason for the decline is that sending countries such as South Korea and China changed their policies about transnational adoption and as a result influenced the number of children that were deemed adoptable (Smolin, 2021).

Origin of transnational adoption

The adoption system and the definition of adoption used in modern Western society is a new concept (Hübinette, 2021). Throughout history and across cultures, there have been traditions and systems in place for fostering or taking care of children within extended kinship networks. In these systems, children may be cared for by relatives or members of their community in situations where their parents are not able to do so. These arrangements often maintain some level of connection between the child and their family, and there is typically a pre-existing relationship or biological tie between the child and the caregiver. This is in contrast to modern Western adoption practices, where there is an emphasis on non-existing biological ties or familial relationships between the child and adoptive family before the adoption takes place. The link between the child and their family of origin is completely severed, meaning that the child and birth family remain unknown to each other after the adoption is finalised. Through legal processes, the adoptive family becomes the child's legal guardian, assumes all parental rights and gives a new legal identity to the child, thereby establishing the child into the adoptive family. Benet (1976) argues that this approach to adoption can be seen in the light of modernization and the standard of the nuclear family that was promoted in Western countries.

Coloniality in transnational adoption

Commer (2023) argues that transracial adoption practices can be traced back to a complex and problematic colonial history of oppression. It can be linked back to practices like chattel slavery and the forced removal of Native American children from their families. These children were often adopted into white families either to serve as cheap labour or to undergo assimilation in boarding schools. In these schools, they were stripped of their cultural identity, languages, traditional clothing, and spiritual beliefs. This process was typically driven by a desire for land or the imposition of Western cultural norms. Scholars like Wekker et al. (2007) and Cawayu & De Graeve (2020) describe something similar, where

they outline the parallels between transnational adoption and the colonial practice of displacing indigenous children in the US, Canada, and Australia as part of forced assimilation during and after European colonisation.

Cawayu & De Graeve (2020) further argue that the interpretation of transnational adoption can be seen as a colonial practice embedded in a larger history of exploitation of the Global South and the constructed migration dominated by the Global North. The Western countries perceive transnational adoption as a charitable, humanitarian approach; however, many developing countries view them as a continuation of colonialism. In their eyes, transnational adoption is seen as a means for powerful nations to exert control, exploit resources, and reinforce notions of superiority over the less powerful nations. Alstein & Simon (1991) similarly argue that transnational adoptions perpetuate a cycle where the wealthy exploit vulnerable countries, stripping them of their children and reinforcing stereotypes of inferiority.

White saviourism and racist ideologies in transnational adoption

Scholars such as Kim (2010), Trenke et al. (2006), and Commer (2023) argue transnational adoption as being intertwined with colonialism, racist ideology, white supremacy, and the white saviour complex to generate power, wealth, influence, and control. Commer (2023) outlines that transnational adoption is a manifestation of white saviourism. White saviourism refers to the belief or attitude held by white people that they are morally obligated or inherently superior to “save” or improve the lives of people of other races or ethnicities (Anderson et al., 2021). White adopters may view themselves as benevolent rescuers, committed to providing a better life for the adoptees.

An example of how racist and saviourist ideologies are intertwined with transnational adoption is portrayed by Johnson (2016). She describes an infamous documentary called ‘The Dying Rooms’. The documentary claimed that Chinese orphanages left Chinese baby girls in rooms to die. It is supposed to show how the government and institutions are not able to care for these children. Johnson (2016) argues that it is a very one-sided and dramatic documentary with orientalist undertones. Nevertheless, the documentary resonated with the Western world and fuelled orientalist and racist stereotypical views of China. The documentary illustrated to the Western world that Chinese girls needed to be rescued from a country that did not value them and did not want them. It sparked a sentiment that these poor girls needed to be rescued from this barbaric and strange country. Media like this documentary popularised transnational adoption of Chinese girls to Western countries and has been used as a justification that transnational adoption was necessary.

However, the research of Johnson, (2016) debunks the myth that Chinese girls were unwanted in China. She found out that every healthy Chinese girl who was transnationally adopted to Western countries could have been domestically adopted in China. She describes Chinese families that were more than willing to adopt girls and bring them up as their own. However, due to policies related to population

control, political interests, and to answer to the demand of Western infertile couples, more than 120,000 girls got separated from their country and culture of origin.

This example showcases that due to racist beliefs and rescuer ideology, the adoption of Chinese girls was marketed as something morally good, and this justified the massive migration of Chinese girls. Hübinette (2021) adds that there is an orientalist bias in transnational adoption, as he explains it is not a coincidence that most sending countries are in Asia; Asian children are perceived as being docile, submissive, clever, hardworking, quiet, and petite in the West. He explains that adoption is often seen as a privilege for white people and highlights that transnational adoption practices are intertwined with colonial thinking and racial hierarchies, questioning who is deemed worthy to adopt who based on race (Hübinette, 2021).

Adoption industrial complex

McKee (2016) argues that transnational adoption can be seen as the transnational adoption industrial complex (TAIC), where the sending countries' state, orphanages, adoption agencies, and receiving countries', state and agencies operate in conjunction with each other. McKee uses the term industrial complex to highlight the inherent demand and supply processes that are prevalent in transnational adoption. She describes how the adoption system creates a continuous supply of children who are deemed orphans.

McKee's research aligns with Yngvesson's (2010) and Briggs's (2012) studies where they explored how the international and national adoption system commodifies children and where monetary values are placed on orphans based on their health, race, and age. Cawayu & De Graeve (2020) adds that adoption is a demand-driven industry that perpetuates practices of abuse, child trafficking and other malpractices. Briggs argues that the adoption system perpetuates social and economic hierarchies, as children from impoverished or marginalised communities are often transferred to middle-class and wealthy communities. Briggs further explains that the transnational adoption system targets vulnerable communities, in particular unmarried women, who have a low socio-economic position. Consequently, she argues that transnational adoption is a feminist issue, as both single and married mothers are marginalised from society and lack the means to support themselves and their children.

Dorow (2006) argues that transnational adoption cannot be solely viewed as an altruistic relationship between the receiving and sending countries of adoption, since the system is intertwined with financial transactions, legal agreements, and power dynamics between countries. Additionally, there is the cultural perception and value that is placed on adoption that is exchanged between the sending and receiving country. All in all, they highlight the importance of the social and economic context of transnational adoption and consider the larger structural inequalities and systemic issues that are at play.

Transnational adoption is used as a geopolitical tool and financial source.

Hübinette (2021) examined the adoption system through an anthropological and historical lens to research how international adoption has developed and exists between the complex dynamics of colonialism and modernity. He uses South Korea as a case study and showcases the power dynamics between receiving countries and sending countries. Illustrating how transnational adoption is used as a geopolitical tool and intertwined with financial interest. Hübinette argues that American military and humanitarian involvement in South Korea served broader Cold War objectives aimed to strengthen political relations and justify anti-Communist interventions in the region. He explains further that the adoption of Asian children can be seen in a wider context to establish familial ties with Asian countries, thereby serving broader geopolitical agendas.

The pattern of American war meddling and the occurrence of transnational adoption is not a coincidence and replicates itself in other countries besides Korea, for example in Vietnam and Thailand. Klein (2003) argues that America tried to embody the 'white mother' archetype by adopting Asian children. As a result, Asian countries were infantilized and viewed as unable to care for their children. McKee & Oh (2015) argue that Cold War politics cannot be overlooked in the origin of the adoption system. They further explain that the adoption industry is not only financially beneficial for adoption agencies and orphanages but also for the state and the government. The adoption industry was for South Korea a much-needed economic boost. South Korea's transnational adoption approach has been the template for a multi-dollar industry that other countries apply and replicate.

The case of Korea shows that transnational adoption is intertwined with the political and financial interests of both the receiving and sending countries that partake in the adoption system. For both parties' transnational adoption is politically and financially beneficial. In the case of Korea and other sending countries, transnational adoption is economically rewarding for adoption agencies, and orphanages and a financial boost for the economy. For some countries, transnational adoption is viewed as a solution to the social welfare problem and reduces the financial cost of building a social welfare system. For Western countries, it is a way to strengthen their position and influence in the Global South, build relationships with the sending countries and solve the internal demand for children from infertile couples.

This illustrates that the adoption system is not as altruistic and humanitarian as it promotes itself to be. The system is rooted in colonial histories and shaped by racial inequalities. It is a system that commodifies children and perpetuates inequities. The system is driven by a demand for children, used for geopolitical agenda and financial benefits. It becomes clear that the underlying dynamics of the adoption industry are not in the best interest of the child and its family but in the interest of political power and money.

First parents & families are under-represented.

The first families are the biological parents of the adoptee but due to adoption, the legal and biological ties are broken with the parents and the child. In the context of transnational adoption, the first families are from countries in the Global South. In the CAS field, scholars are aware that first families are

marginalised in research and discourse. They argue that first parents inhabit a subordinate position towards the adoptive system as they are deprived of all parental rights and any post-adoption support (Cawayu & Sacre 2024). Research has shown that first parents are excluded from narrating their own experiences and perspectives in the academic field and society (Cawayu & Sacre, 2024; Högbäck, 2019; Kim, 2016; Clemente-Martínez, 2022). Hubinette (2004) describes narratives about first families that are frequently told from the perspectives of adoptees, adoptive parents, or adoption agencies. He argues that the voices of first parents are used to justify the action of separating children from their parents.

Centering first families

The portrayal of first families lacks awareness and incorporation of the heartbreaking impact the relinquishment has on the first families. Kim (2018) describes how Korean mothers experienced the separation of their children and illustrates that it had a lasting effect on the family and mother's life. Johnson (2016) and Bo's (2007 & 2023) studies confirm this and showcase how mothers and families are grieving the loss of their children and are experiencing feelings of grief, sadness, pain, and loss. In Johnson's research, Chinese mothers and families have said that they think about their children every day and that life has never been the same after that traumatic experience. Janot Mason (2018), who was forced to relinquish her child, talks about that real harm was done by a system that forcefully separates from mothers and children. She argues that attention must be paid to those who paid too dearly for the happiness of others. She further advocates for first mothers to be included in academia, emphasising the need to address the psychological and emotional damage inflicted on them.

Cawayu & Sacre (2024) describe that first families have been speaking out about their experience and have been advocating for justice and reunion with their children. They outline the example of the Argentinian organisation 'The Grandmothers of the Plaza de Mayo' are grandmothers searching for their children who were forcefully separated from their family during the period 1976-1983. The organisation has been actively campaigning for truth and reconciliation (Arditti 2002). Another example they give is about three mothers in Guatemala, who are seeking their children who were abducted by child traffickers in 2016 and were placed in transnational adoption programs. Clemente-Martínez's (2022) research shows that first families are actively searching and trying to reconnect with the children they were separated from due to adoption. However, her research shows that the adoption industry and policies make it difficult for first families to reunite and find their children. As Cawayu & Sacre (2024) argue, scholars and society should learn and listen from first parents directly: a 'learning from below' approach. They argue that researchers must engage with first parents and should not speak on their behalf, but rather should strive to understand and address the power imbalances that hinder their self-representation. This approach aims to make these power dynamics visible, open to discussion, and ultimately subject to change.

Dynamic between the adoptive parents and the first parents

The position of adoptive parents as the ‘real’ parents and ‘real’ family of the adoptee has been justified and legitimised through international conventions and adoption policies. These regulate and construct the adoptive family as equal to the traditional biological family. Yngvesson (2007) argues that the most significant justifying regulation is that of the ‘clean break’, which denounces the child’s relation with their parents of origin and erases all biological ties. This space is replaced by the construction of the adoptive family and legitimised with legal policies. For example on the birth certificate of the adoptee, the first parents are removed and replaced by the adoptive parents.

This erasure is further perpetuated in society's narrative & language which makes the distinction between ‘birth/biological parents’ and parents, the adoptive parents claiming the label of parents. As Buterbaugh (2013) argues, adoption language often depicts adoption as equivalent to the act of giving birth. This perception is reinforced through social customs such as hosting baby showers for adoptive mothers, and the comparison of the adoption procedure to that of pregnancy and birth. Gallants (2021) shows how American adoptive mothers, who adopted Chinese children, use Orientalist narratives about the first parents to legitimise and justify their own identity as a mother of the Chinese adoptee.

She studied three documentaries about Chinese adoptees and showcased how the narrative of the adoptive mothers dehumanised and erased the first mother and grounded the adoptive mother’s position. One adoptive mother could not understand why her adoptive daughter was curious about her mother of origin and said the following: ‘I appreciate that she gave you up, and I appreciate that I have you, but as far as anything else, I don’t care about her (...) I don’t understand what it is that [adoptee] is upset about and angry about. I’ve loved her unconditionally.’ Gallant notes that this discourse of the adoptive mother showcases the erasure of the first parent and the recentering of herself as the mother. Other examples entail the adoptive parent saying the adoptee is finally a real person after being renamed, implying that before finalising the adoption paper, the adoptee was not seen as a person. Another adoptive mother said during the documentary that she was bathing in the mommyhood after finalising the social work papers.

This highlights that the identity and position of adoptive parents are intertwined with the ‘social death’ and erasure of the adoptee’s first mother (Kim, 2010). The hole that is left by the first mother is replaced with the newly gained position of the adoptive parents as well as their own values and cultural beliefs, without acknowledging the cultural, language and biological ties that were lost with the first mother.

Adoptive parent’s role in the transnational adoption industry and discourse

Adoptive parents are a vital part of the adoption industrial complex, as they represent the ‘demand’ of this commodified system. The former director of the Dutch adoption agency ‘Wereld Kinderen’ argues that adoption parents’ interests are creating a commodified system where demand creates supply (Hut, 2023). She describes a particular encounter with an organisation of adoptive parents whose aim it was

to shorten the time of adoption procedures. One of their ideas for shortening the waiting list of prospective adoptive parents is proposing market competition between adoption sending countries. The organisation argued that there are enough adoptable orphans, and they find it ridiculous that only one adoption agency could operate within a given country. They accused 'Wereld Kinderen' of monopolising adoption in certain countries, arguing that allowing multiple agencies would enhance efficiency and reduce the waiting time for prospective adoptive parents. Ironically, in the Netherlands, it is mandated by law that only one adoption agency can operate in a sending country, as multiple agencies creates a higher risk of market competition and therefore the risk of the commodification of children. Hut (2023) describes how adoptive parents were willing to risk malpractice to cater to the demand of infertile couples for adoption. This example highlights how adoptive parents advocate first and foremost for their own interests and their own desire to have children, which comes at the expense of the best interests and the safety of the child themselves.

Adoptive parents have also taken a leading role in the discourse, research, policies, and approaches surrounding transnational adoption. For example, a lot of adoption agencies are run by adoptive parents, such as Holt International Children's Service, founded by the American couple Harry and Bertha Holt, after they adopted eight Korean children themselves. As transnational adoption started as a rescue mission, many adoptive parents were motivated by ideologies of white saviourism and Christianity. These adoptions were often driven by factors such as infertility issues or a sense of divine calling to expand their families through adoption. Faith, Christianity, and the lobby of adoptive parents impacted the adoption field, as the research of Joyce (2013) has shown. She outlines how conservative evangelical groups influenced the adoption industry by establishing a network of adoption agencies, ministries, and political lobbying groups that shaped the adoption landscape. She argues that the language that is used, how people think about adoption, and the places that are chosen to adopt from have all been shaped by the evangelical adoption movement.

Part 2: The Social Structure Lens

The second part of the framework consists of the social structure lens, which focuses on the beliefs, assumptions, and biases about transnational adoption, first parents, adoptees, and adoptive parents. This lens analyses how these social phenomena about the aforementioned actors are reflected in the technology. The left vertical axis of the matrix outlines transnational adoption, first parents, adoptee, and adoptive parents. All the corresponding key assumptions, beliefs, and biases about these actors should be written down as well. On the top horizontal axis of the matrix, the components are outlined. Again, the components are:

- Design, including the interface, style, symbols, metaphors, colours, and graphics that are used; and lastly,
- Language & discourse, including the text, concepts, framing, and language that is used.

- Function & use, which include the interaction, functionality, usage, and usage and options in the technology;
- Technology, which encompasses the material, hardware, non-digital components of the technology that are needed to access and use the technology;

The assumptions, beliefs, and biases about these actors are to be mapped out to the components to observe how these are portrayed and presented in the technology. For example, an assumption that exists about first parents is that they voluntarily gave up their children. For transnational adoption, there exists the belief that adoption is the only hope for orphans. How are these social structures represented, portrayed, or even amplified in the different components of the technology? These observations are then written down in the matrix.

Part 2: Social structure lens	Design <small>How is the design and interface of the technology presented? What are the visual elements and how are they presented?</small>	Language & discourse <small>What are the words and phrases used in the technology? How are they used? What are the implications of the language used?</small>	Use & function <small>How is the technology used? What are the functions and features? How are they presented?</small>	Technology <small>What are the material and hardware components of the technology? How are they presented? What are the implications of the technology?</small>
Transnational Adoption • • •				
The first parents • • •				
The adoptees • • •				
The adoptive parents • • •				

Part 2: Accompanying theory for social structures

Similarly to power structures, it is necessary to have a foundation of knowledge about the prevailing biases, assumptions, and beliefs that surround transnational adoption, first families, adoptees, and adoptive parents in order to apply the social structures lens to a technology and find the assumptions, biases, and beliefs embedded within the technology. The following theory is synthesised from CAS literature, and it is important to mention that the following theory is not a literature review of the entire CAS field but a synthesised one, that is relevant to HCI and the application of the framework. The following theory is extensive, but once again, not exhaustive.

Transnational adoption is seen as the only hope for millions of orphans

Transnational adoption is viewed as a positive and humanitarian action where thousands of orphans are waiting to be adopted, and transnational adoption the only viable solution for these children. Several scholars, including Withaek et al. (2023), have discredited this claim. They argue that adoption agencies and organisations who claim that thousands of children are waiting to be adopted are exaggerating the number of children in need of adoption by employing an expansive definition of orphanhood. UNICEF statistics suggest there are 147 million orphans, however, they define orphans as

“children of whom one or both parents are deceased”. This definition means that so-called orphans might have a living parent or extended family who can take care of them. This is in contrast to the traditional view of orphans as children with no living parents or family left. As a result, UNICEF's definition and number of orphans includes children that are ineligible for transnational adoption due to the presence of family and relatives.

Joyce (2013) confirms this claim and adds that many children, who are adopted transnationally, have living family members. One reason why people think that there are so many orphans is that there exists a misconception that orphanages are ‘packed’ with children. Joyce explains that in some cases, families are unable to care for their children due to financial constraints. She describes situations where these families have to place their children in orphanages in the belief that it is a temporary measure to keep them fed and taken care of. However, they later find out that their children have been transnationally adopted without their consent or knowledge.

Cheney & Rotabi (2017), who conducted a study on orphanages in Uganda, argue that orphanages are used as a revenue model to attract altruistic funders, volunteers and so-called orphanage tourists. They further explain that orphanages occupy a position that creates ‘orphans’ and adoptable children for transnational adoption by separating children from their families and placing them in the orphanage. Sending countries are required to find a solution for the child within their borders before turning to transnational adoption, and poverty should not be the main reason for transnational adoption. This approach is rooted in the belief that raising children within their own country, culture, community, and among their people is advantageous for the well-being and identity of the child. However, this policy is not always adhered to in transnational adoption, and ironically, Whitehawk et al. (2023) illustrate that poverty is often cited as the primary reason for transnational adoption. They suggest that the funds allocated for adoption fees and procedures could have instead been utilised to support families and their children in their country of origin; promoting family preservation and avoiding the need for transnational adoption in the first place.

First families are reduced to their reproductive aspect

Buterbaugh (2013) studied how the invented ‘Respectful Adoption Language’ (RAL) has marketed and contributed to the industrialization of adoption and the objectification of mothers by domestic infant adoption. With RAL, certain words regarding adoption are replaced or reframed to make adoption more socially acceptable to the public. Even though Buterbaugh’s research focuses on domestic adoption, a similar construction and framing of the adoption language is seen in transnational adoption. For example, the terminology of parent and mother is replaced by biological/birth parent and biological/birth mother. Buterbaugh points out how the use of language such as ‘birth mother’ or ‘biological parents’ marginalises and dehumanises first parents. She describes that by using these distinctions, adoption language implies that those who raise and nurture the child are the ‘real’ parents, while the birth parents are reduced to mere biological contributors. This portrayal suggests that the role of first parent is solely

reproductive, stripping them of the emotional and relational aspects of parenthood. She highlights further that this dehumanisation is unique to adoption, as in other situations such as divorce, the mother is not labelled as an 'ex-mother' or 'birth mother', emphasising the discriminatory treatment experienced by birth parents within adoption narratives.

Assumption that first families are incapable of taking care of their children

Cawayu & Sacre (2024) describe how first parents are often characterised as people who live in severe poverty and are not able to care for their children due to financial reasons. Typically, the economic position of the first parent is depicted as a cause of their wrongdoings and lack of responsibility. It is used as an argument that they are 'bad' parents and not adequately taking care of their children. The parents are blamed as individuals for their economic circumstances rather than considering broader social, economic, and cultural issues, and the exploitative nature of the transnational adoption industry. Studies that explored the experience of first parents and the relinquishment of their children show that the reason behind relinquishment is complex and intertwined with economic and social pressure from society, families, and policies (Clemente-Martínez, 2022; Johnson, 2016; Prebin, 2013). Cawayu & Sacre argue that the stereotype of poverty and inadequacy of first families is used to affirm the stereotypes held by Western countries about the Global South. Thereby justifying the actions of transnational adoption and 'saving' the children from their dire circumstances.

Assumption that first families voluntarily gave their children up for adoption.

First families are portrayed as willingly cooperating in giving their child up for adoption. It is depicted as a deliberate and well thought out choice (Riggs, 2012; Jerome & Sweeney, 2013). However, in practice, the situation is far more ambiguous and complex. As Janot Mason discusses in the multidisciplinary perspective by Homans et al. (2018), as a mother herself, she was coerced into believing that she was not fit for motherhood and felt like she had no choice but to surrender the infant whom she loved instantly for adoption. Research shows that similar situations occur in transnational adoption, where mothers are coerced or told that they are not fit to be a mother. Briggs (2012) describes how the transnational adoption system targets vulnerable families, in particular unmarried women of colour who have a low socio-economic position. Bos (2007 & 2023) explored the perspective of Indian mothers on relinquishment and adoption. She describes how misogynistic and patriarchal perceptions and beliefs of motherhood influenced unmarried mothers to relinquish their children. She describes how the adoption industry, with its financial interests, perpetuates this and as a result, mothers view relinquishment as their only option. Cawayu & Candaele et al. (2023) argue that inequality is inherent to transnational adoption, and the system perpetuates this inequality further. They critically outline that the heartbreaking choice that parents make when relinquishing their child, is a choice made in desperation out of limitation. It is based on a lack of options, and they question whether this action can

be seen as a free choice. In other cases, the parents never agreed to transnational adoption and the child is involuntarily taken from the family (Johnson, 2016).

Adoptees recentring themselves

In the field of adoption, much has been written about adoptees by adoption experts, professionals, and adoptive parents. The adoptee was the object of study of many researchers. Studies have been done on adoptees' mental health, behaviour, self-esteem, and overall development after adoption. The results of these psychological and social work studies showcase that transnational adoptees experience an improvement in their physical, socio-emotional, and cognitive development after adoption (Bimmel et al., 2003; Juffer & Van IJzendoorn, 2005; Van IJzendoorn & Juffer, 2000). Despite the fact that adoptees are overrepresented in health care and are four times more likely to attempt suicide, the results of the studies conducted in these fields illustrate that the majority of adoptees are doing well. These studies and their positive results are used to highlight the positive outcomes of transnational adoption and how it offers more benefits than other child welfare systems such as foster care (Sácre, et al., 2021), thereby deeming transnational adoption as a good practice.

As described by Withaek et al. (2023), transnational adoption can be viewed as an opportunity for children to obtain a feeling of security, and thus adoptees can experience contentment with their adoption and adoptive family. However, Withaek et al. (2023) also highlight that transnational adoption should not be discussed in the confined binaries of 'good' versus 'bad', and that scholars should look at the underlying social and political context and structures. They explain that positive views of adoption can exist, but should not be used to diminish the malpractices and inequalities within the transnational adoption system. CAS researchers have shown that these inequities are an inherent and unavoidable part of the system, and those flaws are unacceptable for a system that claims that it is in the best interest of the child.

Additionally, the feeling that adoptees have towards their adoption can change over their lifetime and may be different from moment to moment. Current research encompasses only a small phase of the adoptee's life, mainly focused on the childhood and adolescent stages. Moreover, despite what numbers may say, the lived experience of adoptees and their feelings are hard to express in purely quantitative studies. The first generations of adoptees are growing up and maturing into adults. This has started a process of them recentring themselves, where they become the subject of their own lives, rather than an object to be studied. Adult adoptees are exploring the complexity and diversity of their experiences, and reflecting on the impact that adoption has had on their lives; asking questions about identity, race, and the hybrid position adoptees find themselves in as 'outsiders within'. They are examining the impact of their involuntary migration and exploring their connection with and relationship towards their country of origin; dealing with and navigating feelings of loss and grief. Transnational adoptees are reshaping the discourse about transnational adoption through their own experience and perspective, both in the academic field and in societal contexts through activism and community

building (Trenka et al. 2006). They are moving away from the narrow view of whether adoption is good or bad; holistically exploring and critically examining the transnational adoption system, and how transnational adoption has impacted the various aspects of their lives.

Unseen loss and grief of transnational adoption

Adoption is often depicted as a win-win situation, where childless couples and so-called orphans are seen as a perfect match. However, this romanticised picture of transnational adoption disguises the other side of adoption; the experience of grief and loss that adoptees go through by being separated from their family, country, culture, language, and identity. The psychotherapist Verrier (1993) was one of the first scholars who wrote about this feeling of loss, grief, and pain that adoptees experience after the separation from their mother. Verrier found out that the experience of separation from the mother had a severe impact on the child and their further life trajectory. She argues that separating children from their mothers is a traumatic experience that leaves an imprint of loss and abandonment on the child. Verrier (1993) calls this the primal wound, which exists on a physical, emotional, psychological, and spiritual level and can affect every aspect of the adoptee's life. Verrier has academically validated unacknowledged feelings of loss and grief experienced by adoptees as a result of the involuntary separation from their mothers. It is a topic that adoptees are consistently writing and talking about in different ways, such as Jane Trenka's memoir, *The Language of Blood* (2003). Other media include academic research (Meyers et al., 2023), autobiographical narratives (DeBetta, 2023; Malhotra, 2013), theatrical plays, poetry, and art that explore feelings of grief and loss experienced by adoptees.

Fundamental fracture

An overlooked feeling experienced by adoptees is the pain and loss associated with the fracture in the fundamental social, legal, and familial relationship with the parents of origin and the loss of basic information that an adoptee has of their own identity (Balk et al, 2023). This can have a massive impact on the adoptees as this fundamental fracture separates them from their lineage and ancestors. It separates them from foundational information on who they are, who their ancestors are and where they come from. Information such as birthdate, first and last name, and other lineage information is not clearly evident for adoptees as they are a given for non-adoptees. There is the additional possibility that the information that the adoptee knows about their origin might be fabricated or false. Dorow (2006) argues that this uncertainty can result in prevailing questions about their family and origin; leading to struggles and trauma for adoptees. The recent study of Villanueva O' Driscoll et al., (2023) confirms this, as they have researched the psychological and social effects of malpractices in the transnational adoption system experienced by adoptees. Lack of information or falsifying information about the adoptee's origin or family was included as malpractice. Adoptees indicated that they struggled with how they lack information about their family. The study also highlighted other types of malpractice experienced such as children and human rights violations, abduction and abuse, and no adequate support regarding post-

adoption. The adoptees described how all of these malpractices had a lasting effect on their mental well-being, their existential right to exist, their measure of self-worth, and their level of confidence.

Colonial wound of transnational adoptees

Another overlooked experience of transnational adoptees is the impact of the disjunction of the adoptee's country of origin, culture, and language and therefore a part of the adoptee's identity. As De Greave (2013, 2010) and Cawayu & De Greave (2020) argue, even though the concept of the primal wound does include the unacknowledged and misunderstood feelings of grief and ambiguous loss surrounding adoption, it is a perspectives that does not account for the social and political distress the adoptee might experience in a Western country by inhabiting colonial and racial discourses and systems. They critique the primal wound as originating from a depoliticized, psychopathological perspective that individualises the adoptee's experience. In other words, the concept of the primal wound fails to acknowledge the potential harm and trauma associated with being raised in a Western country, particularly one with a predominantly white population and entrenched in colonial and racist structures. Adoptees may experience feelings of being a minority and endure racism, discrimination, marginalisation, and psychological distress rooted in the receiving country's racist and colonial perceptions and biases about the adoptee and the country of origin.

Cawayu & Greave call this the colonial wound, derived from decolonial thinkers (Maldonado-Torres 2007; Mignolo, 2017; Quijano 2007). The 'colonial wound' described by Cawayu & Greave refers to the physical as well as the psychological suffering endured by individuals as a result of racism and the harm done by a dominant discourse that challenges the humanity of those who are not part of the dominant cultural or geographical perspective. Multiple studies have explored the discrimination and racism experienced by adoptees in their receiving countries and adoptive families (Hübinette & Tigervall, 2009; Baden, 2015; Reynolds et al., 2020; White et al., 2022).

In particular, Cawayu & Greave outline the well-intentioned but harmful practices of 'cultural work' done by adoptive parents (Graave, 2013; Quiroz 2012; Park Nelson 2006). Cultural work is a process where the adoptive parents construct and shape the identity of the adoptee and themselves by participating in cultural activities such as consuming food and music, and collecting artefacts of the adoptee's country and culture of origin. This can be problematic and harmful, since this identity-making is constructed based on the colonial and Western gaze of the adoptive parents and society. Quiroz explains that this creates a fictional and distorted construction of identity that limits the ability to maintain a relationship with the country of origin. It might have the effect of further alienating the adoptee from their country and culture.

Cawayu & Greave (2020) have interviewed Bolivian adoptees about their adoption experience, one adoptee in particular, described how she became aware of her brown body, how it differs from the Belgian norm, and its impossibility to adhere to the Belgian norm. The adoptee explains how she internalised a "colonial" perspective, which has led her to view Bolivia solely through the lens of poverty

and underdevelopment. As a result, she distanced herself from Bolivia, as she did not want to be associated with the negative stereotypes attached to her country of origin. Cawayu & Greave describe how this struggle between the dominant discourse and the experience and identity of the adoptees themselves are at the centre of adoptees' claim of belonging.

Their research showcases how Bolivian adoptees 'delink' themselves from the Western dominant narrative and use decolonial tactics to empower themselves. For example, Bolivian adoptees choose to embrace and celebrate their cultural heritage instead of concealing or downplaying their racial identity. They wear and proudly display aspects of their Bolivian culture, such as Bolivian accessories, speaking Spanish in public with other Bolivian adoptees, visiting Bolivia or living there for extended periods. These results align with other research that showcases how adoptees are empowered by relearning their language of origin and as a result restores dialogue with the communities of their home country and enables them to take ownership of their experience and identity (Sacre, 2023).

Out of the fog and beyond

As adoptees become aware of the impact adoption has had on their lives, they exit the so-called 'fog'. Out of the Fog was coined by the adoptee community. This concept describes the process of an adoptee becoming aware of the problematic systemic issues within transnational adoption practices and how this has impacted their lives. Related to this, Branco et al. (2023) have proposed an adoptee-conscious model template based on Anzaldúa's seven-stage model of coming into consciousness; which is a model for the process by which individuals deconstruct their knowledge about what they know, and move towards a new consciousness as a form of decolonization.

The adoptee's conscious model is a five-stage model that begins with the status quo. In this phase adoptees believe the dominant narrative. The adoptee views adoption as something positive and as a blessing. They will not critically question the adoption system, or the individuals involved. The second stage is rupture, where an incident, a piece of information or an event disrupts the status quo narrative. They may discover that their own or other adoptions are illegal, or that certain information is false or fabricated. They might also become more aware of the fact that they are seen as different and as a person of colour, even though they identify as the white nationality of their receiving country. The adoptee may choose to dive deeper into this disruptive information or choose to reject it. The third stage is dissonance, where there is a tension between opposing beliefs and truth. This may cause emotional pain, anguish, or dysregulation. The adoptee may try to find like-minded people who struggle with these contradictions and use that to position themselves and negotiate where they fit in with the new information. Then, the expansiveness stage, where adoptees reside in a paradoxical state of multiple perspectives existing simultaneously, and they are learning to tolerate the discomfort of this paradox. The adoptees acknowledge the social injustice that is inherent in adoption, and the adoptee may join communities or seek other like-minded people. It is a stage of reinvention and rediscovery, where they see themselves as having an intersectional identity. The last stage is forgiveness and activism, where the

adoptees are fully aware of the systemic oppression as part of adoption practices and history, and they challenge the dominant narrative. They also begin the process of forgiveness. They may learn to understand that the actions and ideology of their adoptive parents are a mechanism of the adoption industry that upholds dominant narratives about gender and reproductive rights, but still holds people accountable when needed.

Most of the struggles that adoptees go through and their experiences are not known publicly. Media mostly elevates success stories that portray adoptees as happy and forever grateful. Adoptees opposing this 'success' are depicted as angry and ungrateful. However, the above discussion has highlighted that the adoptee's experience is not simplistic or binary, it is complex and diverse and unique for every adoptee. The effects of adoption ripple through every aspect of a person's life, both on an individual level and within the broader societal context. For instance, research projects and papers have been written about how adoptees experience parenthood (Song, 2023; Zhou et al., 2020); illustrating the unique struggles adoptees experience in becoming and being a parent. Research is ongoing on the impact of adoption on the next generation, exploring the experience of the adult children of transnational adoptees (Flikweert, 2021); illustrating how the impact of adoption goes beyond the adoptee. As this passage sheds light on the loss, struggles, and overlooked experiences of adoptees. It is crucial to highlight that adoptees are not reducible to just their struggles and traumatic experiences. While emphasised here due to their marginalisation in academia and mainstream adoption narratives, adoptees are multifaceted individuals beyond the adversities they faced.

Dualist position of adoptive parents

Adoptive parents inhabit a position as oppressor with respect to the first parents, since the existence of the first parents challenges the adoptive parent's position as the 'real' parents of the adoptee. Additionally, they maintain the adoption industry with their demand for children, thereby reinforcing the commodification of children and potential malpractices. This highlights that adoptive parents inhabit a power-laden position and how the adoptive industry caters to their interests. This has shaped the adoption narrative and industry; thereby impacted the adoptee's life and that of the first family. Certain adoptive parents become aware of the problematic adoption industry; they speak out about the problematic system and acknowledge their role within the adoption system, assuming accountability for their actions. Branco et al. (2022) argue that adoptive parents can find themselves in a process similar to the adoptee consciousness model. They describe how this process can elicit unprocessed grief about the adoptive parent's inability to have biological children of their own and pre-adoption loss. Branco et al, describes that due to this process adoptive parents can experience feelings of guilt, shame, rejection, confusion. They might feel anger towards the adoptee or the adoption system.

4. Testing the framework

The framework has been tested on two case studies: 'INEA' and 'Lotus Tours'. These have revealed the framework's capability to analyse power and social structures in technologies aimed at adoptees. The cases have shown that the framework offers a thorough analysis with detailed results, the full extent of which has been included in the appendix. The discussion presented here will focus on the most notable and frequently observed power and social structures identified. It is important to note that the forthcoming results are illustrative rather than exhaustive, showcasing the type of insights the framework can generate. For the comprehensive and detailed analysis of the case studies, refer to Appendix A: "Framework Results Case Studies."

Case study 1: Lotus tours

The Lotus Tours case study is an analysis of a web-based application run by two adoptive mothers who organise and arrange heritage tours for adoptive families and adoptees. They directly organise heritage tours for China and Ethiopia, and give advice on regular tours to China, Thailand, Cambodia, and Vietnam. The website consists of a home page, about us page, contact page, and experience page with reviews of Lotus Tours. There are specific pages for heritage tours and regular tours. During this case study of Lotus Tours, Lotus Tours itself was identified in the role of the organisation and founder; adoptive families were identified in the role of user and founder; and adoptees were identified in the role of user and target group. Applying the framework revealed the following results in the technology: First, the dual position of Lotus Tours as an organisation and adoptive parents. Second, the power dynamic between adoptive parents and adult adoptees in reconstructing the adoptee's identity and culture of origin. Lastly, the recurring social structure of erasing the first parents and viewing the adoptee through the lens of an 'adoptive child'.

organisation can charge a fee. Lotus Tours also recommend activities that require connections that they can provide, examples include needing a translator, a guide, or a driver. Moreover, throughout their template tours, they repeatedly suggest the same locations with similar activities and at the same hotels. For instance, they have recommended visiting the city of Guilin in China, staying at the hotel 'The Giggling Tree' and going on a boat excursion on the Li River. Chengdu, China is also often recommended, and people are encouraged to visit the zoo and see pandas. The destination Yangzhou, China is frequently paired with harvesting tea leaves under the guise of a Dutch tour guide. This pattern of packaged locations and locations at this frequency could indicate that there exists a partnership with these other businesses, which benefits Lotus Tours financially. It becomes clear that the business interests of Lotus Tours are embedded in the selection of these activities and the contents of these tours. Therefore, the organisation's financial interests shape the contents of the heritage tours.

Lotus Tours and adoptive family's interest in reconstructing adoptees' cultural identity and heritage. The interest of adoptive parents in creating and reconstructing the identity of the adoptee and the cultural heritage of the country of origin is prevalent in this technology. As Lotus Tours is managed by two adoptive parents, this is further amplified. The choice of the logo and the name of the organisation is a lotus. The lotus is used in Asian culture to symbolise authenticity, connection, spiritual awakening, beauty, and simplicity. The organisation aligns themselves with these values and indirectly show how they perceive the heritage and culture of the countries they organise trips for. Throughout the design the technology uses red, yellow, and orange colours, and photos that elicit an exotic and orientalist aesthetic based on a Western perspective of Asian culture.

As the two adoptive mothers are the creators of this technology, their perspective as adoptive parents and how they view and conceptualise heritage and culture is set as the standard in the technology, including in the functionality and design, which centres a curated list of locations and activities. Lotus Tours suggests and gives recommendations on, what to visit, what to see, how and when. The places, locations, and 'must sees' that Lotus Tours recommends are mostly tangible heritage sites and tourist attractions, reflecting the Western and modern emphasis on tangible heritage over intangible heritage. This establishes these places and activities as necessary to fully experience the cultural heritage of the country. The underlying assumption that this cultural heritage that is part of the tour experience is the same as that of the adoptee. One can question whether these activities and site visitations foster the connection and feeling of belonging that adoptees might be seeking, and if they are representative of the adoptee's actual cultural heritage or origin.

Throughout the language and discourse of this technology, it becomes clear that it is assumed that a heritage tour is an 'essential', 'special', and 'unique' experience for adoptees and adoptive families and that it is different from a normal holiday. Why a heritage tour is so different from any other holiday is never substantiated. However, these examples showcase that adoptive parents bring with them a

certain perspective and expectation of what a heritage tour is supposed to be, and how it will impact the adoptee. It sets the boundaries for how adoptees are allowed to reconnect with their culture of origin.

This recreating and reconstructing of the 'cultural origin' of adoptees can be understood through the concept of cultural work by Greave (2014) where adoptive parents construct the identity and citizenship of the adoptee. In this concept, adoptive parents assume that the adoptee has a cultural origin that needs to be fostered by different cultural activities. This approach has been criticised by CAS scholars as it can further alienate adoptees from their culture of origin and might create a fictional or distorted cultural identity based on adoptive parents' perspective and narrative of the country of origin. Which limits the adoptee in maintaining a genuine connection with their first country.

The adoptive parent's perspective on cultural heritage, cultural identity and origin can clash with that of the adoptee. As adoptees can experience culture and heritage differently, have a different perspective, and differ in the ways in which they want to reconnect with their country of origin. This conflict can be seen in the technology as the functionality and interaction largely focus on activities, which aligns with the interest of the adoptive parents and the financial interest of the organisation. There are no functions and interactions specifically aimed at adoptees to help them foster and maintain a connection to their cultural origin. Heritage, for adoptees, can also be defined as lineage information, who their families are, where they come from, local rituals and customs. This concept of heritage is not included in the perspective of Lotus Tours and is not reflected in the technology. Additionally, the way one connects with their culture of origin is not solely through tourist activities and visiting tangible heritage. For every adoptee, this is different and is a unique process that needs time and patience. Multiple visits may be necessary to seek the connection they are looking for, these trips could include visiting foster families, attempts to find their first family or reunite with them, meeting with other adoptees or staying for a prolonged period. They might travel and explore their country, meeting local people, experiencing their customs, tradition and learning the language. There are various ways an adoptee reconnects with their country of origin; however, these are not reflected on the website of Lotus Tours.

Portrayal of the first parents

What also becomes apparent is the absence of the first parents. They are not presented as any component throughout the technology. Their only mention is as 'birth parents', where they are solely seen through the biological relationship with the adoptee. They are mentioned throughout the discourse as a mere option to visit during a heritage tour. However, their existence, relationship, and potential importance to the adoptee is not mentioned. Neither is the first family's experience of losing their child nor is the importance of reuniting with their child included.. They are portrayed as a one-dimensional character that does not inhabit any feelings or experiences of their own and are only mentioned in relation to someone else.

The first parents are not seen as a potential user or target group for the technology, even though first parents might be interested in using Lotus Tours' services or connections. For example, first parents might want to travel together with the adoptee in their country, go on a trip together, or want to have a translator that can help in the communication between the first parent and adoptee. However, these interests are not reflected on the website. Additionally, the technology facet, hardware, and objects that are needed to use and access the technology are not easily accessible for first parents. The website is accessible for users in the EU zone that have access to a laptop or mobile device, and have a stable internet connection. On top of that, the language and discourse is in Dutch, which creates another barrier for first families to use the technology. This highlights that the main users are adoptive families who reside in the EU zone, speak Dutch, can easily access a laptop or mobile device, and have a stable internet connection.

Portrayal of the adopted child

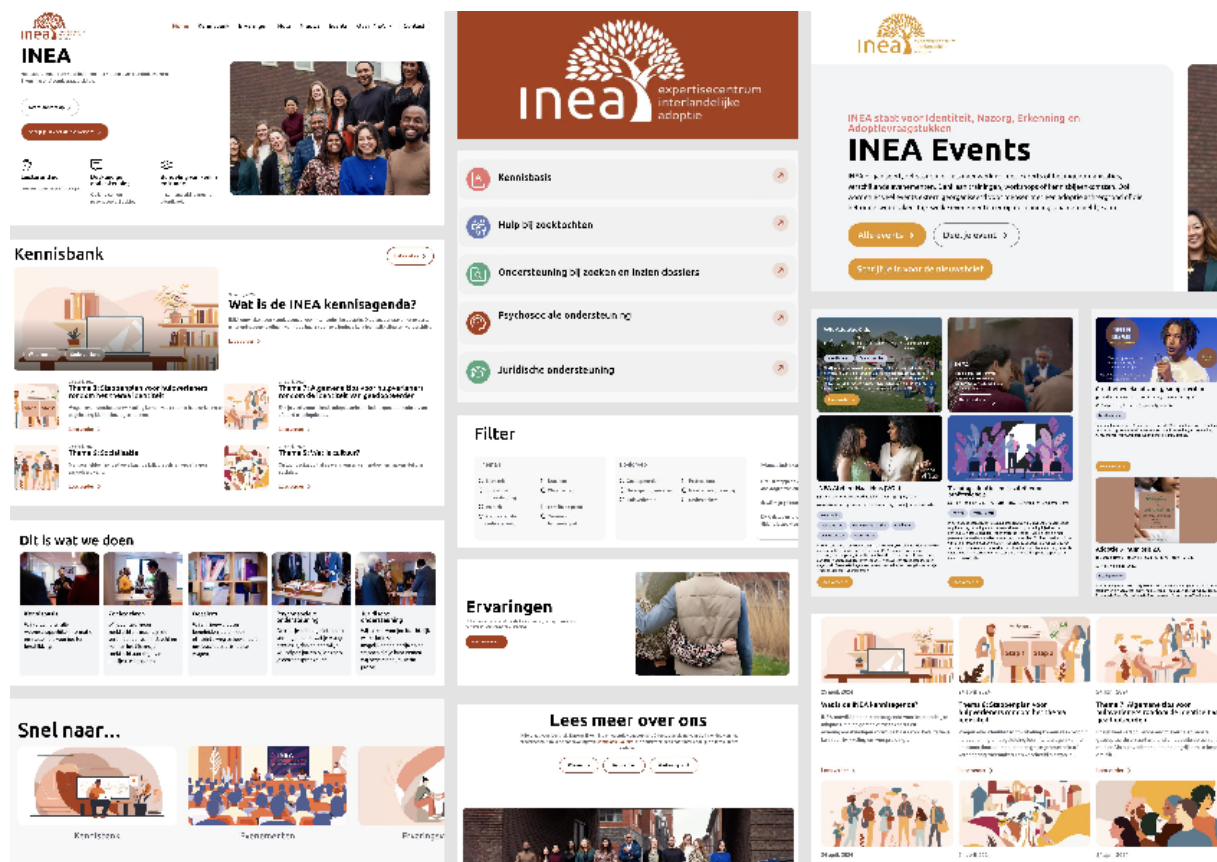
The adoptee in this technology is portrayed as a 'child' and viewed as a passive actor. The language and discourse that is used, is directed towards adoptive parents. Adoptees are referred to as 'your children'. Adoptees are not taken into consideration as an active actor in this technology. The adoptee is talked over instead of talked to. For example, people who had already booked a tour with Lotus Tours share their experiences in the review section. All of these reviews are written by adoptive parents, where they describe how *they* experienced the heritage tour, and *they* write about how the adoptee felt and experienced the trip.

Photos of adoptees are used in the technology, where they pose and smile before landscapes or tourist attractions. However, there are no photos, stories, functions, or interactions that encourage the expression of the adoptee's own experience of the heritage tour. The discourse also mentions several times that, even though it is a heritage tour, the organisation can ensure that it is still an enjoyable and a relaxing holiday. This centres the adoptive parent's interests and shows a lack of awareness about what it means for an adoptee to visit one's country of origin and the impact it has.

Case Study 2: INEA

The INEA case study concerns a web-based application that is part of the expertise centre of transnational adoption in the Netherlands (INEA). The expertise centre was created after Joustra (2021) concluded that the Dutch government was aware of the malpractices in the transnational adoption system, but did not take action to prevent these. Based on the results of the report by Joustra (2021), the research commission had advised the government to set up an expertise centre where transnational adoptees could go for support, help, and questions related to their adoption. INEA was created as a collaboration between the Ministry of Justice and Safety, adoption organisations, experts, researchers, and transnational adoptees.. Applying the framework to the INEA case has revealed that the technology prioritises the interest of FIOM and the Dutch government instead of the adoptees that they aim to help

and assist. The social structure fails to acknowledge the structural inequalities inherent in transnational adoption, as well as the actor's involvement and responsibility.



Dynamic between INEA and adoptees

INEA, functioning as an expertise centre, strives to operate as an independent organisation that is available to everyone who has questions related to transnational adoption. They specify that they aim to help transnational adoptees in particular. INEA, in collaboration with the government, FIOM, experts, researchers and adoptees, strives to help and support adoptees based on five cornerstones – core principles. These cornerstones include: a knowledge repository, assistance with legal questions, accessing adoption files, psychosocial support, and helping adoptees to search for their first families.

These cornerstones align with adoptee interests. Nevertheless, through the functionality and design of the technology, it becomes clear that the technology does not keep up with the cornerstones in practice, and they do not support the interests of adoptees. Only a single cornerstone has actually been implemented in the functionality: the knowledge repository, where users can find articles and information related to adoption, other cornerstones are not reflected directly in the functionality. The adoptee interests can, however, be indirectly represented, through articles, events, or when contacting INEA directly for questions. Alignment is possible, especially if these articles and events relate to the adoptee's topic of question, but they are not supported by a specific interaction or function.

There are no functions or interactions that help adoptees in viewing their adoption file or starting a search for their first family. Another example of how the adoptee's interests are not supported is the difficulty by which adoptees can share their experiences of adoption. Although it is possible for adoptees to send their story to INEA directly and INEA uploading it to the platform, this attempt at community building lacks interaction, function, and design; forgoing the possibility to foster acknowledgement and recognition for the sender themselves and other adoptees. As the current setup is a one-sided approach, there is no option available for other adoptees to react to the stories, start a conversation, or create a relationship or connection. This also highlights INEA's influence in controlling the narrative and discourse on their platform, and this approach lacks privacy and security as stories can be read by anyone that has access to the internet. This in turn might influence the content and stories adoptees are shared, as some content might be too vulnerable or personal to share on the internet directly.

These examples show that the functionality and use of the technology is not specifically made for the interests of adoptees, but are meant for a wider public. Not prioritising the adoptees' interests can also be seen in the logo design of INEA. Their logo is a tree, but misses one vital part that represents one of the biggest things that adoptees struggle with, the 'roots', ie. lineage information, accessing files, restoring one's name, and finding one's first family. It is interesting to note that throughout the discourse and language there is an understanding of the necessity of having access to lineage information and adoption files; and being able to search for and find one's first family; and the impact that adoption has on adoptees. However, this is not reciprocated in the functionality and interaction, even though they are part of the five cornerstones that INEA has claimed in their approach to helping adoptees.

Prioritising cooperation and collaboration over adoptee interests to the benefit of FIOM, INEA and the Dutch government

The handling of adoptee interests can be contrasted with that of the interests of FIOM, INEA, and the Dutch government. Through the functionality and design, it becomes clear that the primary interest represented in this technology is fostering wide-net collaboration and generating active participation by staying neutral, even if at the expense of adoptees. It does not reflect the organisation's stated aim of representing the adoptees' interests. . For example, there is a high emphasis on events, as users can browse upcoming events, register for events, and read about past INEA events. Other organisations also have the option to submit their event to INEA to be featured on the platform. The event functionality is further prioritised as it inhabits its own subpage, with a different house style, navigational hierarchy, and lay-out.

From the perspective of FIOM, INEA, and the Dutch government, this feature is beneficial as events foster collaboration, knowledge sharing, and connections. These collaborative and cooperative interests are also represented by the design. INEA's logo is a tree, which symbolises wisdom, knowledge, connection, renewal, and growth. It aligns with the vision of INEA, FIOM, and the Dutch government, where they want to work together with different organisations and actors to form a big

network to foster knowledge and connection, rather than solely focus on adoptees. The tree can also be viewed as a symbol of renewal and a 'new life cycle', which is applicable to the current situation as the Dutch government and FIOm want to work towards a new approach and start over. They are moving away from a harmful past and leaving behind the mistakes that were made regarding transnational adoption.

INEA outlines that they are specifically aiming to help and support adoptees. However, throughout the interface, it becomes clear that the technology is also aimed at other target groups, such as professionals, experts, adoptive parents, and researchers. These are the individuals and parties that FIOm, INEA, and the Dutch government want to collaborate with. For example, on the events page and knowledge repository, there is an option to filter the events and articles on audience and reader. Even though INEA does not mention them explicitly in their discourse as a target audience, the filter option includes adoptive parents, researchers, experts, and professionals. Only events and articles relevant for that specific target group would show up. Being approachable to more target groups than just adoptees is also reflected in the design of the technology. The aesthetic of the technology is minimalistic and generic. Brown, red, orange, and pastel colours are used for the icons, buttons, and text. There are no specific patterns or unique styles used in the design that embody a specific target group's identity or experience. The web application enables this as a website is easily accessible for everyone who has access to a phone, desktop, laptop, and stable internet connection. This is also seen in the stock-visualisations that are used for articles and events. The visualisation is generic, corporate and does not centre a specific target group identity. This is beneficial for attracting a big number of differentiated target groups, as all groups can project themselves on the generic visualisations. The difference is especially stark when these visuals and pictures are compared with those of those for the events and articles of external organisations, especially those made by adoptees. These visuals depict adopted faces, characters and themes in a distinct style. INEA's visuals depict adoptees as 'faceless' as they show people photographed from behind.

INEA's attempted objectivity and collaborative efforts are also reflected in the language and discourse used in the technology. INEA tries to be objective and take a detached third person neutral position. News related to transnational adoption is always reported purely factually, and a political stance or opinion in favour of adoptees is never taken on the given topic. This can be seen in the choice of wording for 'adoptive parents' and 'birth mother/biological mother', which is paired with a disclaimer. They argued that they were aware of the different terms that are used for first families, but have chosen for biological families based on this being the preferred definition among respondents in their questionnaire. The respondents were not only adoptees, but also included adoptive parents, professionals, researchers, and others that have some kind of (different) interest in adoption.

INEA's interest in collaboration with and neutrality in the face of a broader audience clashes with their stated aim of specifically helping and supporting the adoption community. This neutral position is reflected in the portrayal of transnational adoption. Through the discourse and design, there

is an emphasis on the individual impact of adoption and a lack of acknowledgement of the structural inequalities in transnational adoption. For example, there is a focus on ‘recognition’, ‘feeling heard’, and ‘sharing knowledge’ for adoptees. This can be seen in the representation of adoptees in pictures, photo’s, banners, and articles.

Another example are the events that target experts and professionals to become more adoption sensitive. Although spreading awareness on the complex and diverse experience of adoptees is positive, by over-emphasising the individual experience, it shifts focus away from the harmful systemic problems in transnational adoption that are also at the root of the problems, issues, and questions that adoptees have. This is evident in their language too, as they use the term: ‘intercountry adoption’, whereas CAS scholars prefer to use ‘transnational adoption’, to emphasise the structural global inequalities between the countries that are involved in adoption. On top of that, the involvement of FIOM and the Dutch governments in the malpractices of transnational adoption are not acknowledged either. The only related mention of this is that INEA was created in response to the research of Joustra (2021). This neutral position and not acknowledging the involvement of these actors with the malpractices of transnational adoption benefits these organisations, and their aim for collaboration and cooperation. However, this comes at the expense of the trust, reconciliation efforts, and the interests of the adoption community.

Strengths and weaknesses of the CAS framework for analysing technologies in HCI

The results of the case studies have shown that the framework can analyse underlying power and social structures in technologies aimed at adoptees. The framework has a strong potential to showcase power imbalances between actors and interests in conflict. For example, the case study of Lotus Tours has proven that the framework can make the power imbalance between the adoptee and adoptive parents evident. Adoptive parents inhabit a dual position as the user but also as the founder and creator of Lotus Tours. Meanwhile, adoptees are viewed as a passive actor and their interests are not reflected in the technology. The adoptive parents’ perspective of culture and heritage is set as a standard in the website application, which can clash with the perspective that adoptees have of their own culture and heritage. In the case study of INEA, the dynamic between the Dutch government, FIOM, and adoptees is observed, where INEA seems to prioritise collaboration and active participation rather than the interests of adoptees. This does not only clash with adoptees' own needs in family search, legal help and psychosocial support, but also with INEA’s stated vision and mission related to the five cornerstones.

The framework is capable of illuminating assumptions, biases and stereotypical portrayals of transnational adoption, adoptees, and first parents. In both case studies, the first parents are solely portrayed through their biological relation to the adoptee. This marginalises the complex experience of the first family. The case studies have shown a recurring pattern of first families only being mentioned in relation to someone else, and their perspective is told not from their own perspective, but from that of other actors, such as adoptive parents. In the case of Lotus Tours, adoptees are portrayed as ‘children’

which infantilize adult adoptees. On the other hand, in the case of INEA, adoptees are not infantilised or seen as passive users. The complex experience of adoption is seen through the portrayal of adoptees themselves. However, INEA overly emphasises the individual struggles of adoption and does not address the structural inequalities in transnational adoption. Additionally, both case studies portrayal of transnational adoption omits the involvement of actors such as the government, adoption agencies and adoptive parents in malpractice and the perpetuation of a flawed transnational adoption system.

On the other hand, these case studies have also shown limitations and weaknesses of the framework. The following constraints and shortcomings were observed: lack of recommendations and concrete solutions, high knowledge threshold, ambiguity in applying the framework, and absence of a definitive conclusion.

Lack of recommendations and concrete solutions

The framework facilitates the critical analysis of social and power structures within technologies aimed at adoptees. However, it falls short of providing specific recommendations and solutions, especially for designers or researchers that might want to use the results of the framework for improving the technology. When applying the framework to the two case studies, it became evident that the analysis results were primarily focused on criticism and evaluation, with little room for design improvements, proposed recommendations, and strengths in the technology. Throughout the analysis of the case studies, I felt the tendency to think about solutions, enhancement, and different technical concepts when it showed power imbalances of actors or stereotypical portrayals. However, the framework did not include a designated area for these ideas and recommendations. This resulted in briefly writing down the recommendations, ideas, and tips in the matrix or on a notebook. Future work for the framework could benefit from including a section or designated area for recommendations, ideas, or design concepts encountered by the individual applying the framework. This would allow individuals to document their ideas and improvements. These can later serve as inspiration or concepts for further elaboration and iteration, to improve the technology.

High knowledge threshold

The framework is guided by the knowledge possessed by the individual that applies the framework to the technology. This can be difficult for scholars that have no experience or background in CAS, even though the framework offers a basis of CAS theory, not all topics, contexts, and information that is needed to analyse the technologies in more detail may have been covered. When the framework was applied to the two case studies, it became evident that analysing the technologies required additional knowledge about certain actors or contexts that are not addressed in the framework theory.

For the INEA case study, extra information was required to better understand the interests and contexts of the government and FIOM. Without this additional knowledge, the results of the analysis would have been less detailed and extensive. As the framework has the potential to do an extensive and

detailed analysis, its boundaries are limited by the knowledge the user of the framework possesses. It is advised for HCI scholars to seek additional CAS information or expertise for the specific context that their technologies reside in.

Additionally, if the analyser finds their results to be too generic and wishes for more detail, it is advised to conduct a second round of analysis on specific aspects of the framework. This practice was implemented in the two case studies to clarify results and to observe any emergent insights that were not noticed in the first analysis. For example, when switching from part one to part two of the framework. I would sometimes go back to part one based on things I had found in part two, to examine how these were translated into part one. Moreover, I would also go over to specific components of the matrix that were less detailed to ensure thoroughness and to confirm that nothing was overlooked.

Ambiguities in the framework

As the framework offers a lens to scrutinise technologies, the absence of a concrete set of rules means there is a lot of room for the analyser's own interpretation and flexible application of the framework. This can be a strength as well as a weakness. It offers freedom to individuals to approach and use the framework in their preferred manner. During the case studies, user stories were used to categorise the different functions and interactions in the technology, followed by numbering and placing them according to the interest of the actors they inhabit. This technique was not outlined in the framework but was undertaken based on personal preference. However, this freedom of interpretation and approach is also disadvantageous. Without clear guidelines or rules, various analysers may interpret the framework differently, which might lead to heterogeneous results. The ambiguity of the framework may introduce variability in the interpretation of the findings, making it difficult to rely on the accuracy and validity of the outcome obtained from the framework. To address this issue, future work may focus on developing and testing detailed guidelines to identify potential areas of confusion or misinterpretation.

Absence of definitive conclusion

The framework does not lead to a clear and concrete conclusion that HCI professionals can use for future design or research. The framework gives a detailed and extensive analysis, however, HCI professionals may struggle to derive practical results from the framework to utilise in future design and research. Without clear guidance on key points for improvement, professionals may find it hard to determine which results to prioritise and invest time and effort. This can lead to inefficiencies and missed opportunities for enhancements. This can limit the usefulness of the framework for designers and researchers as they struggle to implement the results in concrete design practices and research approaches.

5. Discussion

The overall aim of this research was to propose a Critical Adoption Studies (CAS) framework in the field of Human-Computer Interaction (HCI) to analyse in what way social technologies aimed at transnational adoptees are situated and influenced by the power and social structures that surround transnational adoption. The results of the case studies show that the developed framework is capable of analysing these dynamics and structures in these technologies. The proposed framework is capable of illustrating how various components of technologies, including functionality, design, language, and hardware/objects, are utilised to serve the interests and contexts of different actors. It reveals potential power dynamics or conflicts of interest that may arise among these actors. For instance, the conflict of interests of INEA, that prioritises the interests of FIOM and the Dutch government rather than the interests of adoptees. Additionally, the framework showcases how these components amplify or perpetuate existing stereotypes, assumptions, and biases in the technology about transnational adoption, first parents, adoptive parents, and adoptees.

It is important to recognize that this study is inherently shaped by my position as a user experience designer, and my experience as a transnational adoptee. Like many CAS researchers, I find myself positioned in the realms of the personal and the political, which has inevitably biased the development and application of this framework. This bias does not discredit the work, but is a significant note to position this paper in the appropriate space. This study is also limited to current technologies. Potential future technologies are not within the scope of this study. Additionally, the framework has solely been tested on website-based applications, other forms of technologies were not available due to location, restriction, and limited access. This has limited the study's exploration of how the framework is utilised in other types of technology, such as apps, virtual reality, interactive installations, or other forms of technology. In future research, it is advisable to test the framework with a broader range of individuals and to apply it to technologies beyond website-based applications. This ensures the framework's continued capacity to analyse social and power dynamics.

The CAS framework provides a deeper understanding of the social and power structures surrounding transnational adoption and how this intersects with technology. This adds to the critical discourse and reflection of the HCI field about how technologies, users, designers, and researchers are situated in these dynamics. Additionally, the CAS framework provides a new perspective in the HCI field, and generates insights in the 'world' of transnational adoptees. This contributes to the inclusivity and diversity efforts of the field. The framework has the potential to reveal design improvements to address power dynamics, centring the interest of certain actors and counter stereotypical portrayal of transnational adoption. This can encourage the development of more inclusive and 'transnational adoption sensitive' designs that better serve the diverse needs of the adoption community. This contributes to the HCI field's effort to translate the current diverse narratives and critical discourse into concrete design principles and approaches for pluriverse design.

This framework can serve both as an example and a template for scholars seeking to introduce alternative perspectives into HCI or raise awareness of the complex social and power structures that surround other marginalised communities like transnational adoptees that have been overlooked in the field. The framework has the potential to serve as an educational tool for aspiring HCI professionals, helping them understand power and social structures and how they relate to the technologies, approaches, or designs they are using and creating.

As of now, the framework lacks specific recommendations and concrete design solutions for improving the technologies that have been analysed. Designers and researchers may struggle to translate the critical insights gained from the framework into actionable design improvements or concrete conclusions. Secondly, the framework's high knowledge threshold poses a challenge, particularly for scholars seeking a detailed and extensive analysis, but lacking expertise in CAS theory. Furthermore, the ambiguity inherent in the framework offers flexibility, but also introduces variability and potential inconsistencies in the process of analysis. To address these challenges, the development of guidelines is necessary to standardise the application of the framework and minimise misinterpretations. Moreover, the framework needs to incorporate tools and mechanisms that facilitate the generation of concrete design recommendations; enhancing the utility of the framework for researchers and designers, and contributing to the HCI field's effort for inclusivity and diversity.

6. Conclusion

All in all, this research proposed a CAS framework in the field of HCI to analyse in what way social technologies aimed at transnational adoptees are situated and influenced by the power and social structures that surround transnational adoption. The created framework is tested on two case studies which has shown its capability of analysing the power dynamic and social structures in technologies. It can show conflicts of interest and the perpetuation of stereotypes and biases that surround transnational adoption. The framework provides an understanding of how technology intersects with power and social structures in a transnational adoption context. This study contributes to the ongoing inclusivity, diversity and critical discourse in the field. Nevertheless, the framework inhabits limitations and weaknesses, notably the lack of specific recommendations and concrete design improvements, as well as ambiguity and high knowledge threshold. In future work, it is recommended to address these challenges by developing guidelines to standardise its application and the incorporation of tools and mechanisms to facilitate the generation of actionable design recommendations. Additionally, it is advised to test the framework with other individuals and other types of technology beyond website-based applications. This ensures its continued capacity to analyse social and power dynamics across technological forms and different individuals applying the framework; pushing the boundary, and moving towards a pluriverse HCI space.

References

- Ali, M. (2014). Towards a decolonial computing. In: Ambiguous Technologies: Philosophical Issues, Practical Solutions, Human Nature, International Society of Ethics and Information Technology, pp. 28–35.
- Altstein, H., & Simon, R. J. (1991). *Intercountry adoption: A Multinational Perspective*. Praeger.
- Anderson, K. R., Knee, E., & Mowatt, R. (2021) Leisure and the “White-Savior Industrial Complex.” *Journal of Leisure Research*, 52(5), 531–550. <https://doi.org/10.1080/00222216.2020.1853490>
- Arditti, R. (2002). The Grandmothers of the Plaza de Mayo and the Struggle against Impunity in Argentina. *Meridians: feminism, race, transnationalism*, 3(1), 19–41.
- Baden, A. L. (2015). “Do You Know YourRealParents?” and Other Adoption Microaggressions. *Adoption Quarterly*, 19(1), 1–25. <https://doi.org/10.1080/10926755.2015.1026012>
- Balk, Y., Frerks, G., & De Graaf, B. (2023) Interlandelijk eadoptie naar nederland: De voortzetting van een gemankeerd beleid. . In Withaecx, S., Cawayu A., Candeale, C., Voorbij Transnationale Adoptie. <https://doi.org/10.46944/9789461175618.5>
- Benét, M. K. (1976). *The Politics of Adoption*. New York : The Free Press.
- Bardzell, S., & Bardzell, J. (2011). Towards a feminist HCI methodology: Social science, feminism, and HCI. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 675–684. <https://doi.org/10.1145/1978942.1979041>
- Bidwell, N. J. (2016). Decolonising HCI and interaction design discourse: some considerations in planning AfriCHI. *Crossroads*, 22(4), 22–27. <https://doi.org/10.1145/2930884>
- Bimmel, N., Juffer, F., van IJzendoorn, M., & Bakermans-Kranenburg, M. (2003). Problem behavior of internationally adopted adolescents: A review and meta-analysis. *Harvard Review of Psychiatry*, 11(2), 64–77.
- Branco, S. F., Kim, J., Newton, G., Cooper-Lewter, S. K., & O'Loughlin, P. (2023). Out of the fog and into consciousness: A model of adoptee awareness. *International Body Psychotherapy Journal*, 22(1), 53–66.
- Briggs, L. (2012). *Somebody’s children: The Politics of Transracial and Transnational Adoption*. Duke University Press.
- Bos, P. (2007). Once a mother : relinquishment and adoption from the perspective of unmarried mothers in South India
- Bos, P (2023). Afstand & adoptie het perspectief van moeders in India. . In Withaecx, S., Cawayu A., Candeale, C., Voorbij Transnationale Adoptie(pp. 231-247). ASP.
- Buterbaugh, K. (2013). Whitewashing Adoption: A Critique of ‘Respectful Adoption Language’ (SSRN Scholarly Paper 2195774). <https://doi.org/10.2139/ssrn.2195774>
- Cawayu, A., & Sacré, H. P. (2024). Can First Parents Speak? A Spivakean Reading of First Parents’ Agency and Resistance in Transnational Adoption. *Genealogy*, 8(1), Article 1. <https://doi.org/10.3390/genealogy8010008>
- Cawayu, A., & De Graeve, K. (2020). From primal to colonial wound: Bolivian adoptees reclaiming the narrative of healing. *Identities*, 29(5), 576–593. <https://doi.org/10.1080/1070289x.2020.1757254>
- Cheney, K. E., & Rotabi, K. S. (2017). Addicted to Orphans: How the Global Orphan Industrial Complex Jeopardizes Local Child Protection Systems. In Springer eBooks (pp. 89–107). https://doi.org/10.1007/978-981-287-038-4_3
- Clemente-Martínez, C. K. (2022). Active Waiting and Hope in Transnational Adoptions: Nepali Birth Families and their Children. *Asian Studies Review*, 47(3), 426–443. <https://doi.org/10.1080/10357823.2022.2142932>
- Commer, C. O. (2023). When ‘Good intentions’ Backfire: A Case for Non-Transracial Legal Guardianship Rather Than Adoption and Why Transracial Adoptions Are Not Trauma Informed. *Abolitionist Perspectives in Social Work*, 1(1). <https://doi.org/10.52713/apsw.v1i1.16>

- Cunningham, J. L., Benabdallah, G., Rosner, D. K., & Taylor, A. S. (2023). On the Grounds of Solutionism: Ontologies of Blackness and HCI. *ACM Transactions On Computer-human Interaction*, 30(2), 1–17. <https://doi.org/10.1145/3557890>
- DeBetta, L. (2023). Expressing the Primal Wound. In *BRILL eBooks* (pp. 19–34). https://doi.org/10.1163/9789004681712_003
- De Graeve, K. 2010. “The Limits of Intimate Citizenship: Reproduction of Difference in Flemish-Ethiopian ‘Adoption Cultures’.” *Bioethics* 24 (7): 365–372.
- De Graeve, K. 2013. “Festive Gatherings and Culture Work in Flemish-Ethiopian Adoptive Families.” *European Journal of Cultural Studies* 16 (5): 548–564.
- Dorow, S. K. (2006). *Transnational Adoption: A Cultural Economy of Race, Gender, and Kinship*. New York: New York University Press.
- Escobar, A. (2018). *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. New Ecologies for the Twenty-First Century.
- Escobar-Tello, M. C., Ruetten-Orihuela, K., Gough, K. V., Fayad-Sierra, J. A., & Vélez-Torres, I. (2021). Decolonising design in peacebuilding contexts. *Design Studies*, 73, 101001. <https://doi.org/10.1016/j.destud.2021.101001>
- Flikweert, B. (2021, 12 december). *The second generation: A story of Korean adoptees’ child*. Koreatimes. https://www.koreatimes.co.kr/www/nation/2023/11/715_320129.html
- Gallant, L. D. (2021). *Maternal Orientalism: Chinese Transracial Adoption, White Motherhood, and the Construction of the Chinese Birth Mother*. Brandeis University
- Garcia, A. A., Maestre, J. F., Barcham, M., Iriarte, M., Wong-Villacres, M., Lemus, O. A., Dudani, P., Reynolds-Cuellar, P., Wang, R., & Pargman, T. C. (2021). Decolonial Pathways: Our manifesto for a Decolonizing Agenda in HCI Research and design. *The 2021 CHI Conference On Human Factors in Computing Systems*. <https://doi.org/10.1145/3411763.3450365>
- Harrison, S., Sengers, P., & Tatar, D. (2011). Making epistemological trouble: Third-paradigm HCI as successor science. *Interacting with computers*, 23(5), 385–392.
- Högbacka, R. (2016). *Global Families, Inequality and Transnational Adoption*. Palgrave Macmillan UK. <https://doi.org/10.1057/978-1-137-52476-8>
- Homans, M., Phelan, P., Ellerby, J., Walker, E., Balcom, K., Myers, K., Nelson, K., Briggs, L., Callahan, C., Pena, R., Wesseling, E., Perreau, B., Curzon, L., Leighton, K., & Yngvesson, B. (2018). Critical Adoption Studies: Conversation in Progress. *Adoption & Culture*, 6, 1. <https://doi.org/10.26818/adoptionculture.6.1.0001>
- Hübinette, T. (2004). Adopted Koreans and the development of identity in the ‘third space’. *Adoption & fostering*, 28(1), 16–24.
- Hübinette, T., & Tigervall, C. (2009). To be Non-white in a Colour-Blind Society: Conversations with Adoptees and Adoptive Parents in Sweden on Everyday Racism. *Journal Of Intercultural Studies*, 30(4), 335–353. <https://doi.org/10.1080/07256860903213620>
- Hübinette, T. (2021). From orphan trains to baby lifts: In Outsiders within. Minnesota Press eBooks (pp. 139–149). <https://doi.org/10.5749/j.ctv1j13xzx>
- Hut, I. (2023) Vraag creëert aanbod: interlandelijke adoptie is verworden tot een verziekt systeem van marktwerking. In S. Withaeckx & A. Cawayu ,Voorbij Transnationale Adoptie. <https://doi.org/10.46944/9789461175618.5>
- Irani, L., Vertesi, J., Dourish, P., Philip, K., & Grinter, R. E. (2010, April). Postcolonial computing: a lens on design and development. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1311–1320)
- Jerome, K., & Sweeney, K. A. (2013). Birth parents’ portrayals in Children’s adoption literature. *Journal Of Family Issues*, 35(5), 677–704. <https://doi.org/10.1177/0192513x13493278>
- Johnson, K. A. (2016). *China’s hidden Children: Abandonment, Adoption, and the Human Costs of the One-Child Policy*. University of Chicago Press.
- Joustra. (2021, 21 december). *Rapport Commissie onderzoek interlandelijke adoptie*. Rapport | Rijksoverheid.nl. <https://www.rijksoverheid.nl/documenten/rapporten/2021/02/08/tk-bijlage-coia-rapport>
- Joyce, K. (2013). *The Child Catchers: Rescue, Trafficking, and the New Gospel of Adoption*. Hachette UK.

- Juffer F, van IJzendoorn M (2005) Behavior problems and mental health referrals of international adoptees. *JAMA the Journal of the American Medical Association* 293(20): 2501–2515.
- Kim, E. J. (2010). *Adopted Territory: Transnational Korean Adoptees and the Politics of Belonging*. Durham: Duke University Press.
- Kim, H. (2016). *Birth Mothers and Transnational Adoption Practice in South Korea: Virtual Mothering*. New York: Palgrave Macmillan.
- Kim, H. (2018). Reparation Acts: Korean Birth Mothers Travel the Road from Reunion to Redress. *Adoption & Culture*, 6(2), 316-335.
- Klein, C. (2003). *Cold War Orientalism: Asia in the Middlebrow Imagination, 1945-1961*. Univ of California Press.
- Lazem, S., Giglitto, D., Nkwo, M. S., Mthoko, H., Upani, J., & Peters, A. (2022). Challenges and Paradoxes in Decolonising HCI: A Critical Discussion. *Computer Supported Cooperative Work (CSCW)*, 31(2), 159–196. <https://doi.org/10.1007/s10606-021-09398-0>
- Maldonado-Torres, N. 2007. "On the Coloniality of Being: Contributions to the Development of a Concept." *Cultural Studies* 21 (2–3): 240–270.
- Malhotra, P. (2013). *An Autoethnographic Journey of Intercountry Adoption*. Qualitative Report, 18(32).
- Mason, J. (2018). Birthmothers: Their Rightful Place in Critical Adoption Studies. In *Critical Adoption Studies: Conversation in Progress*, 6(1), 9-12
- McKee, K. D. (2016). Monetary Flows and the Movements of Children: The Transnational Adoption Industrial Complex. *The Journal Of Korean Studies*, 21(1), 137–178. <https://doi.org/10.1353/jks.2016.0007>
- Meyer, M., Wiggins, E., & Elliott, G. M. (2023). Adult Adoptees' Adoption-Related Experiences of Counseling, Loss, and Grief: A Transcendental Phenomenological Study. *The Professional Counselor*, 13(2), 129–144. <https://doi.org/10.15241/mm.13.2.129>
- Mignolo, W. D. 2017. "Coloniality Is Far from Over, and so Must Be Decoloniality." *Afterall: A Journal of Art, Context and Enquiry* 43 (Spring/Summer 2017): 38–45.
- Myers, K. (2018). Marking the turn and new stakes in (critical) adoption studies. In *Critical Adoption Studies: Conversation in Progress*, 6(1), 17-20
- Ogbonnaya-Ogburu, I. F., Smith, A. D. R., To, A., & Toyama, K. (2020). Critical Race Theory for HCI. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–16. <https://doi.org/10.1145/3313831.3376392>
- Oh, A. H. (2015). *To Save the Children of Korea: The Cold War Origins of International Adoption*. Stanford University Press.
- Park Nelson, K. (2006) Shopping for Children in the International Marketplace. In *Outsiders Within: Writings on Transracial Adoption*, edited by J. J. Trenka, J. C. Oparah, and S. Y. Shin, 89–104. Cambridge, Massachusetts: South End Press.
- Pendse, S. R., Nkemelu, D., Bidwell, N. J., Jadhav, S., Pathare, S., De Choudhury, M., & Kumar, N. (2022). From Treatment to Healing: Envisioning a Decolonial Digital Mental Health. *CHI Conference on Human Factors in Computing Systems*, 1–23. <https://doi.org/10.1145/3491102.3501982>
- Prébin, E. M. 2013. *Meeting Once More: The Korean Side of Transnational Adoption*. New York: New York University Press.
- Quijano, A. (2007) Coloniality and Modernity/Rationality. *Cultural Studies* 21 (2–3): 168–178.
- Quiroz, P. A. (2012) Cultural Tourism in Transnational Adoption: "Staged Authenticity" and Its Implications for Adopted Children. *Journal of Family Issues* 33 (4): 527–555.
- Reynolds, J., Elimelech, N. T., Miller, S. P., Ingraham, M. E., Anton, B. M., & Bhattacharjee, C. (2020). In Their Own Voices: Identity and Racial Socialization Experiences of Young Adult Chinese Adoptees. *Review Of General Psychology*, 25(1), 85–100. <https://doi.org/10.1177/1089268020963597>
- Riggs, D. W. (2012). Intercountry Adoption and the Inappropriate/d Other: Refusing the Disappearance of Birth Families. *Social Policy and Society*, 11(3), 455–464. doi:10.1017/S1474746412000127

- Sacré, H. (2023). Kan de geadopteerde vertalen? Een pedagogische beschouwing van erfgoedtaal(on)geletterdheid in transnationale adoptie. In Withaeckx, S., Cawayu A., Candaele, C., Voorbij Transnationale Adoptie <https://doi.org/10.46944/9789461175618.5>
- Schultz, T., Abdulla, D., Ansari, A., Canli, E., Keshavarz, M., Kiem, M., Martins, L., & Oliveira, P. (2018). What Is at Stake with Decolonizing Design? A Roundtable. *Design and Culture*, 10, 81–101. <https://doi.org/10.1080/17547075.2018.1434368>
- Smith, R. C., Winschiers-Theophilus, H., Kambunga, A. P., & Krishnamurthy, S. (2020). Decolonizing Participatory Design: Memory making in Namibia. *Proceedings Of The 16th Participatory Design Conference 2020 - Participation(S) Otherwise-volume 1*, 96-106. <https://doi.org/10.1145/3385010.3385021>
- Smith, R. C., Winschiers-Theophilus, H., Loi, D., de Paula, R. A., Kambunga, A. P., Samuel, M. M., & Zaman, T. (2021). Decolonizing Design Practices: Towards Pluriversality. Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems, 1–5. <https://doi.org/10.1145/3411763.3441334>
- Song, A. R. (van Geel, R). (2023) Hoe ik mama en dochter werd: over moederschap als geadopteerde. In Withaeckx, S., Cawayu A., Candaele, C., Voorbij Transnationale Adoptie. <https://doi.org/10.46944/9789461175618.5>
- Suchman, L., (1987), *Plans and Situated Actions: The Problem of Human-Machine Communication*. New York: Cambridge University Press.
- Suchman, L. (1993), *Working relations of technology production and use*. Computer supported cooperative work, Vol. 2 No. 1, pp. 21-39.
- Thomas, P. J. (1995), *The Social and Interactional Dimensions of Human Computer Interfaces*. Cambridge, MA: Cambridge University Press, 1995. pp. 67-106.
- Trenka, J. J. (2003). *The Language of Blood: A Memoir*. <http://ci.nii.ac.jp/ncid/BA70780076>
- Trenka, J. J., Oparah, J. C., & Shin, S. Y. (2006). Outsiders within: Writing on Transracial Adoption.
- Wekker, G., & Åsberg, C. (2007). Je hebt een kleur, maar je bent Nederlands: Identiteitsformatie van geadopteerden van kleur
- White, E. E., Baden, A. L., Ferguson, A. L., & Smith, L. (2022). The intersection of race and adoption: Experiences of transracial and international adoptees with microaggressions. *Journal Of Family Psychology*, 36(8), 1318–1328. <https://doi.org/10.1037/fam0000922>
- Winograd, T., & Flores, F. (1987), *Understanding Computers and Cognition*. Norwood, NJ, Ablex Publishing Corp.
- Withaeckx, S., Cawayu, A., & Candaele, C. (2023). Voorbij transnationale adoptie: een kritische en meerstemmige dialoog.
- Wong-Villacres, M., DiSalvo, C., Kumar, N., & DiSalvo, B. (2020). Culture in Action: Unpacking capacities to inform Assets-Based design. *Proceedings Of The 2020 CHI Conference On Human Factors in Computing Systems*. <https://doi.org/10.1145/3313831.3376329>
- van IJzendoorn M, Juffer F (2006) The Emanuel Miller Memorial Lecture 2006: Adoption as intervention – meta-analytic evidence for massive catch-up and plasticity in physical, socio-emotional, and cognitive development. *Journal of Child Psychology and Psychiatry* 47(12): 1228–1245.
- Verrier, N. N. (1993). *The primal wound: Understanding the Adopted Child*. Verrier Publishing.
- Villanueva O' Driscoll, J., Jaspers, Y., & Vanspauwen, N. (2023). Geadopteerden aan het woord: de psychosociale impact van wanpraktijken in transnationale adoptie. In S. Whitaeckx, A. Cawayu, & C. Candaele, Voorbij transnationale adoptie : Een kritische en meerstemmige dialoog (pp. 97-115). ASP.
- Yngvesson, B. (2007). Refiguring Kinship in the Space of Adoption. *Anthropological Quarterly*, 80(2), 561–579. <https://doi.org/10.1353/anq.2007.0036>
- Yngvesson, B. (2010). *Belonging in an Adopted World: Race, Identity, and Transnational Adoption*. University of Chicago Press.
- Zhou, X., Kim, J., Lee, H., & Lee, R. M. (2020). Korean Adoptees as Parents: Intergenerationality of Ethnic, Racial, and Adoption Socialization. *Family Relations*, 70(2), 637–652. <https://doi.org/10.1111/fare.12439>

Appendix

Appendix A: Framework Matrix Results Case Studies

Case study: Lotus tours

Use the following link to see the case studies in more detail:

https://www.figma.com/design/rt7nmC7fYGA3IpuiyhhRD2/Results_Casestudy_CASframework?node-id=0-1&t=Dpt9THGiB0tBJdSf-1

Part 1: Power structure lens					
Step 1: Who is involved?		Step 2: Context & interest			
Lotus tours, as the initiative and founders		Adoptive parents want to visit their country of origin and experience reconnect to the culture, people, and language.			
Adult adoptees		Adoptive parents want to find information about their first year in their country, visit their orphanage or meet their foster family or first family.			
Adoptive families		The next step for adoptive parents can be seen as an important aspect of their identity and how they perceive themselves and their country. It can reflect on how they feel received and be impactful on their identity.			
		Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.			
		Adoptive parents use the website as a tool for shaping their own identity and that of their adoptive child.			
		The adoptive parent's interest in maintaining the adoption cultural origin and related cultural aspects highlights what can be seen as valued.			
		The user stories made for component 'function & use'			
		1. As a user, you can book a trip to China, Vietnam, Taiwan, Maldives & Cambodia. 2. As a user, you can view detailed travel itineraries. 3. As a user, you can request information for a heritage trip. 4. As a user, you can browse through different types of heritage trips. 5. As a user, you can request a quote. 6. As a user, you can request a quote. 7. As a user, you can access the latest news from Lotus Tours. 8. As a user, you can fill out a contact form to get in touch with the organization. 9. As a user, you can receive personal advice. 10. As a user, you can share your perspective of the trip. 11. As a user, you can get travel advice on how to shape your own trip. 12. As a user, you can read reviews of others that went on a heritage tour.			
Step 3: mapping out the interest on the components		Function & use	Technology	Design	Language & discourse
Actor 1 and their interests:		Financial interest as business owners	Adoptive parents want to visit their country of origin and experience reconnect to the culture, people, and language.	Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.	Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.
Actor 2 and their interests:		Reconnecting with culture of origin, community and language.	Adoptive parents want to find information about their first year in their country, visit their orphanage or meet their foster family or first family.	Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.	Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.
Person 3 and their interests:		Experiencing the country of their adoption, their own identity and their own.	Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.	Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.	Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.

Part 2: Social structure lens				
Design		Language & discourse		Use & function
How are the components used to support the purpose through the material, hardware, software, and people?		How are the components used to support the purpose through the material, hardware, software, and people?		How are the components used to support the purpose through the material, hardware, software, and people?
Transnational Adoption		Adoptive parents want to visit their country of origin and experience reconnect to the culture, people, and language.		Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.
The first parents		Adoptive parents want to find information about their first year in their country, visit their orphanage or meet their foster family or first family.		Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.
The adoptive parents		Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.		Adoptive parents want to experience the country of the birth country of the adoptees to get to know the country, people and culture.

Use the following link to see the case studies in more detail:

Step 1: Who is involved?

[illegible][illegible][illegible]