

This article was downloaded by: [Universite Laval]

On: 04 April 2013, At: 06:53

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Diaspora, Indigenous, and Minority Education: Studies of Migration, Integration, Equity, and Cultural Survival

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/hdim20>

Categorisation of Mapuche Ways of Conceiving Time and Space: Educational Knowledge of the Kimches

Daniel Quilaqueo ^a & Héctor Torres ^b

^a Center for Education Research and Intercultural Indigenous Contexts, Faculty of Education, Catholic University of Temuco, Chile

^b Department of Anthropology, Laval University, Canada

Version of record first published: 28 Mar 2013.

To cite this article: Daniel Quilaqueo & Héctor Torres (2013): Categorisation of Mapuche Ways of Conceiving Time and Space: Educational Knowledge of the Kimches, *Diaspora, Indigenous, and Minority Education: Studies of Migration, Integration, Equity, and Cultural Survival*, 7:2, 84-98

To link to this article: <http://dx.doi.org/10.1080/15595692.2013.763787>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Categorisation of Mapuche Ways of Conceiving Time and Space: Educational Knowledge of the *Kimches*

Daniel Quilaqueo

*Center for Education Research and Intercultural Indigenous Contexts,
Faculty of Education,
Catholic University of Temuco, Chile*

Héctor Torres

*Department of Anthropology,
Laval University, Canada*

The object of this article is to present a categorisation of the ways in which time and space are conceived in the rationale of Mapuche family education. This approach considers knowledge of natural, social, and cultural elements that characterise the classification of time and space by *kimches* (sages) in the education of children and adolescents in the family environment. This knowledge, which is not covered in the school curriculum, would place school learning in context and provide a better quality education. A contextual analysis is made of the interviews in order to speak to the text in search of hidden meanings. Based on the results, the following categories are distinguished: seasonal cycles, periods of the day, and spatial conceptions present in Mapuche family education.

As occurs with the educational knowledge of sages in most of the Indigenous peoples of America (Reyes, 2008), the education imparted by *kimches*¹ to children and adolescents in families in Mapuche communities in Chile is underpinned by an educational rationale based on observation of nature, society, and spiritual aspects (Augusta, 1991; Housse, 1938). Among these families, the *kimches* are recognised as people with a capacity to enter more deeply into socio-cultural knowledge and wisdom because they have been trained by other *kimches* in socio-cultural contents and in methodological strategies, on the basis of values, such as respect and knowing how to listen.

The training of *kimches* is based on a kind of socio-historical research called *inatuzun*, which seeks to obtain knowledge from the social memory of families and communities (Quilaqueo, 2006, 2012; Quilaqueo, Quintriqueo, & Cárdenas, 2005). In recognition of their knowledge,

¹In the literature, the term *kimche* is defined as sage: learned person, one who knows about Mapuche culture and society (Augusta, 1991; Eriza 1960).

This article presents results of project No. 1110677 “Typification of Mapuche educational methods: bases for intercultural education”, financed by Fondo Nacional de Educación Científica y Tecnológica (FONDECYT).

Correspondence should be sent to Daniel Quilaqueo, Center for Education Research and Intercultural Indigenous Contexts, Faculty of Education, Catholic University of Temuco, Manuel Montt 056, Temuco, Chile. E-mail: dqulaa@uct.cl

they are considered to be experts on the social, cultural, and geographical contexts of the territory in which they live. What they teach differs from what is taught by parents in families because they use specific methods, like *matuzugu* and *gillam* (a type of lesson), based on socio-historical analysis to instruct children and adolescents. Furthermore, this differentiates them from other actors in the Mapuche social medium, as their wise reflection allows them to define their educational activities within the framework of family relations.

This article presents the first results of a study that seeks to categorise the ways in which time and space are conceived in Mapuche knowledge among communities occupying territories within the central southern Chile macro-region.² These conceptions are used in the education of children and adolescents in the family environment, guided by attitudinal, procedural, and conceptual contents that are complemented by the natural and social sciences contained in the school curriculum (Ministry of Education, 2012). A constructive method is used to categorise conceptions, developed by the *kimches*, with the following categories being distinguished: types of seasonal cycles, periods of the day, and spatial conceptions. In brief, these are aspects of knowledge based on the Mapuche rationale (Quilaques, 2012), which will allow pupils to be taught about spatial and temporal orientation in the school medium so that they learn to interact with the natural and social medium from a Mapuche educational focus.

REFERENTIAL FRAMEWORK

The educational focus of the *kimches* is founded on ideas that respond to educational needs in the socio-cultural and natural contexts in which children and adolescents grow up. Knowledge of the conceptions of time and space forms an example of this because they differ from the conceptions established by Western knowledge because "... societies construct referential systems for time and space which grow out of the essential ideologies underpinning their cosmovisions" (Hiernaux, 2007, p. 48). In other words, we find a set of conceptions configured by rationales containing symbols and referents associated with different social and cultural signifiers present in everyday life. This constitutes a reality linked to activities like sowing, travelling, or taking part in religious rites, which are organized "... around the 'here' of my body and the 'now' of my present" (Berger & Luckmann, 1994, p. 39). Historically, this has configured concepts of time and space that make people aware of the experiences that influence their lives both immediately and in the near or distant future. Thus, for Runge and Peña (2005), "The human being, as a corporeal-being-in-the-world, is in a vital space and lives his time" (p. 14) because it is the human being who gives meaning to his world and his environment from the starting point of his world of life—a world of life that for the individual is "... an intersubjective world, a world shared with others" (Berger & Luckmann, 1994, p. 41). Thus, the capacity to interact and to be with others, added to the corporeality of the human being, configures times and spaces with characteristics that may have differing values and representations, depending on the here and now in which people live their lives.

²According to the 2002 census, the Mapuche population in Chile of 604,349 inhabitants represents 3.84% of the population of the country. In the Aricaan Region, there are 263,221 Mapuche, divided between the urban medium, 67.6%, and the rural medium, 32.4%. The Metropolitan Region has the next highest Mapuche population, with 194,262 (National Institute of Statistics, 2003). Another part of Mapuche communities is established in Argentina, in the provinces of Buenos Aires, La Pampa, Neuquén, Río Negro, and Chubut.

From a didactic perspective, the concepts of time and space are not perceived as an objective, real, absolute reality, but as a representation that grows out of the mental constructions of individuals (Trepát & Comes, 1998). On the other hand, from an anthropological–philosophical perspective, it is established that time and space constitutes the warp on which all reality is woven. Thus, spatial and temporal experience must be analysed in the light of each culture, starting from the world conception that is in play (Cassirer, 1993). From a sociological perspective, moreover, it is understood that time and space are concepts that refer to the basic attributes by which people are oriented, founded in a social tradition as conceptual symbols and mechanisms that guide individuals (Elias, 2010). In other words, they are concepts constructed in a state of social development that allow individuals to generalise, summarise, and reflect on observable events.

The notions of time and space, for *kimches*, are the result of a socio-cultural construction that has sustained family and community life, identifying the knowledge that has been necessary to ensure the perpetuation of their society (Gaiña, Acosta, & Bernal, 2008; Quilaqueo et al., 2005). In this sense, construction of knowledge about time and space is linked to observation of the cycles of the sun, the moon, the stars, and nature. The result is a conception based on the comprehension and interpretation of events that form a part of everyday life (Gavilán & Carrasco, 2009). In the communities, a central element of this conception is formed by the repetitive cycles of the sun and the moon, expressed in the seasons of the year in direct relation with the geographical environment.

The Mapuche conception of space (Cárdenas, 2005; Grebe, Pacheco, & Segura, 1972; Huenchulaf, Cárdenas, & Ancalaf, 2004), like that of the Andean peoples (Arce, 2007; González, 2004; Manga, 1994) or the Nahuá cosmovision in Mexico (Báez & Gómez, 2000; Florescano, 2000; Morante, 2000), distinguishes three vertically arranged spatial planes: higher (*wenuwmapu*), intermediate (*nagwmapu*), and lower (*münchemapu*). These planes extend horizontally, ordered by the four cardinal points and the course of the sun (Cárdenas, 2005). Thus, the cardinal points constitute spaces that govern various aspects of individual, social, and productive life in a context that is both spatial and temporal (Grebe et al., 1972; Hirose, 2007–2008). In Mapuche family education, the categories of time and space are associated with symbolic aspects that are natural, social, and spiritual (Quilaqueo, 2010). Each of these aspects is taught through repetition and memorisation by children and adolescents from an educational rationale based on the observation and analysis of social and spiritual beliefs and of nature.

Instruction within Mapuche families responds to methods implemented in historical contexts forming part of social memory and an epistemological framework that can contribute to contextualised schooling through an intercultural educational focus (Quilaqueo & Qumtriqueo, 2010). This implies taking a fresh look at current epistemological aspects in the education imparted to children and adolescents by their families. In this sense, the expression *kuyfke zugu* (collective ancestral memory based in the past³) is central in the Mapuche conception for the construction of knowledge as the only time recognised in education among Indigenous peoples (Quilaqueo, 2006; see also González, 2004). Thus, the epistemological foundation of Mapuche knowledge is expressed in a logic which considers that enlightenment may be gained from recourse to knowledge that is alive in the memory of the family (Quilaqueo 2006). To summarise, it can be shown

³The concept of social memory among *kimches* is found in segments of that memory which each of them uses to teach, and it has been defined on the basis of the works of Halbwachs (1970), Monteparelli (2004), Quilaqueo (2006), and Sabourin (1997).

that the rationale of Mapuche educational knowledge is characterised by the following aspects: (a) a specific set of suppositions and practices that intervene in the personal and social relations of individuals; (b) a set of one's own ideas, beliefs, expectations, and tendencies, which condition their daily actions; (c) it contains a problem related to its conceptual structure, which answers questions about life and, under certain conditions, may not provide the necessary answers; and (d) it has a theoretical referential framework (Quilaqueo, 2010; see also Giroux, 2004).

Finally, to believe that there is only one kind of rationale, valid for the whole of humanity, is an error disseminated by the Western societies which have believed that they hold an absolute monopoly of knowledge (Morin, 1999). The result of this has been that school learning, in the context of Mapuche communities, is based on a monocultural, mechanical, linear model (Quilaqueo & Quintriqueo, 2010; Quintriqueo & McGinity, 2009)—in other words, one that sees the consolidation of a universal knowledge on the model of the natural sciences, which has been implicitly reproduced through school education, as the only way of thinking (Pizzi, 2005). Consequently, it may be concluded that in multicultural educational contexts, the intercultural rationale (Gasché, 2010) allows the limits of every cultural logic to be visited. Furthermore, it recognises that the human mind cannot be omniscient because reality implies mystery, negotiates with the irrational, and is both critical and self-critical since true reason is capable of recognising its insufficiencies (Morin, 1999; see also Quilaqueo, 2006).

METHOD

The research methodology is based on the qualitative paradigm in that it seeks to understand the vital worlds that are the foundation for experiences in the Mapuche context (Flick, 2004; Strauss & Corbin, 2002) through case studies. A number of mutually relevant cases were selected for collective case study, allowing the study object to be explored (Arzaluz, 2005). This allowed theorisation based on a broad set of data (Stake, 2005). In other words, it is not a collectivity that is analysed, but a group of *kimches*. This allowed the knowledge present in Mapuche conceptions of time and space to be studied in greater depth and its principal components to be explained.

The study was carried out in rural localities in the Biobío and Araucanía Regions, within the central southern Chile macro-region. These regions have historically been recognised as Mapuche territory (Bengoa, 2004), and contain 8.80% and 33.66% of the country's Mapuche population, respectively. The following localities were chosen as presenting a high density of Mapuche population: Maquehue, in the district of Padre Las Casas; Rapiñitulewfu, in the district of Nueva Imperial; Lipun, in the district of Galvarino; Quilquen, in the district of Los Sauces; and Cayaqui, in the district of Alto Biobío. Intentional, non-probabilistic sampling was used of 15 *kimches* selected as typical cases, under the criteria of ethnicity, gender, and geographical location (Ruiz, 1996). They were contacted through key informants (community members and teachers working in schools in each community) to facilitate entry into the study context. The reason for choosing intentional sampling was because *kimches* are considered to be individuals who could provide particular information about the study object from the socio-cultural reality of their life contexts (Bisquerra, 2004; McMillan & Schumacher, 2005). The participating *kimches* were divided into eight men and seven women. In terms of conventional schooling, five had not been to school, seven had completed primary education, and three had secondary education. This meant that 66.7% of the *kimches* had received instruction both in the family and at school, allowing them to express

their educational discourse in both *Mapunzugun* (the Mapuche language) and Spanish: 33.3% of the kimches had not been to school and, although they can speak Spanish, they prefer to express their educational discourse in Mapunzugun. With respect to their ages, it was established that eight of the kimches were aged between 70 and 80, five between 50 and 60, and two were aged 40.

The information collection instrument used was the semi-structured interview, applied in Spanish and Mapunzugun to each of the kimches who made up the sample (Bisquerra, 2000; Corbetta, 2003). It was found that 10 kimches agreed to reply to the questions in Spanish, and 5 only in Mapunzugun. The interviews lasted 45 min to 60 min, and were based on a script that allowed information to be elicited about their conceptions of time and space. The interviews were recorded in digital audio format, with review and the signature of an informed consent by the kimches. The interviews were subsequently transcribed for analysis to identify and differentiate the interview with each kimche.⁵ The study data were subjected to qualitative analysis, in terms of human and social sciences, by contextualisation to elicit the meaning of elements (object, event, comments, etc.), particularly of a text or corpus (Pailé & Mucchielli, 2010). Content analysis (Ruiz, 1996) was used for this purpose, complemented by 'grounded theory' (Quilaqueo & San Martín, 2008).

The information was processed by categorisation under grounded theory open coding to express the information obtained in the form of concepts (Flick, 2004; Strauss & Corbin, 2002; Trinidad, Carrero, & Soriano, 2006). The constant comparative method was also used as it concentrates on the '... search for similarities and differences through analysis of the incidents contained in the data' (Trinidad et al., 2006, p. 29; see also Flick, 2004). During transcription and coding of interviews, the content as a whole was reviewed by the project principal researcher and the research assistant in charge of applying the ATLAS.ti software (ATLAS.ti GmbH, Berlin, Germany). This allowed triangulation of coding data, improving the interpretation of implicit elements in the interviews with kimches.

RESULTS

The results allowed three categories to be distinguished: types of seasonal cycles, periods of the day (*anti*), and spatial conceptions. Each category is presented in a table with its respective codes and frequencies of use by the kimches.

Types of Seasonal Cycles

The *types of seasonal cycles* category refers to periods of time recognised as a product of observation of the sun's rotation and changes in the climate over the year. Table 1 shows the seasonal cycles of the year as they are taught to children and adolescents, ordered by frequency of use: *pikam* (winter), *pewit* (spring), *walüg* (summer), sowing time, and harvest time.

⁵The nomenclature used is the letter K (*kimche*), the number of the interview, and the initial of the locality from which the interviewee came (L = Lipun, Q = Quilqueun, M = Maqueños, R = Ralibitulewü, and C = Cayaqui. In this regard, such testimony is presented as follows: (K10C [66]), adding in square brackets the numerical location of the testimony, in the hermeneutic tool created to analyze the data.

TABLE 1
Types of Seasonal Cycles

Code	%
Pükem	25.9
Sowing time	23.5
Pewü	21.2
Walüg	15.3
Harvest time	14.1
Total	100.0

Note. Prepared using ATLAS.ti software (ATLAS.ti GmbH, Berlin, Germany).

The frequency with which *pükem* is used is 25.9%. It is defined as a period associated with cold, rain, and snow in communities close to the Andes. It lasts from the end of April to the middle of August. According to the kinches, it is the period when the annual cycle ends and begins because “the *pükem*, or winter, comes first, then comes *pewü*, and then the harvest, which is called *walüg*” (K5M [71:71]); in other words, it is recognised as the first season of the year. Socially speaking, *pükem* is a period that favours the participation of children and adolescents with their parents in activities linked to sowing the wheat, caring for the animals, and celebrating the New Year, which is called *we xipantu*. Each of these activities is a learning opportunity, reinforced by conversations with the parents at home because of the bad weather. The *pükem* is considered a time for a renewal of nature, necessary for life to develop.

The frequency for *pewü* is 21.2%. When the *pükem* ends (in the middle of August) and plants begin to shoot, the *pewü* is considered to begin. A female kinche said that in *pewü*, “everything begins to flower, the grass begins to flower again, the *mawida* [mountains] flower, the medicines which *chaw günechen* [the higher being] gave us shoot again. That is what happens in *pewü*” (K6M [77:79]). The *pewü* symbolises the rebirth of nature, and is an indicator of the quality and quantity of farm products that will be obtained during the *walüg*. For this reason, the kinches say that the *pewü* is a “time of hope” for the family. A succession of activities is promoted—such as taking the animals out to pasture—which allow children and adolescents to assume responsibilities in the family by taking part in looking after the stock.

The frequency for *walüg* is 15.3%. It starts when *pewü* finishes, and corresponds to the time when crops are harvested and fruits are gathered. During this period, temperatures are higher, which helps the fruit to ripen. In this respect, it is said that “. . . when *walüg* comes, *günechen* gives us food from the earth because the *güybe* [araucaria seed], wheat, and fruit appear” (K8C [42:42]). So, people look forward to *walüg* as a time of abundant food. During this period, children and adolescents can carry out other activities in the open air, linked with harvesting and looking after the livestock. This helps to strengthen social relations and knowledge of their surroundings.

The frequency for sowing time is 23.5%, and it is linked to social and natural processes required for the preparation of the land and the sowing of cereals and vegetables. Social aspects are related with organisation, ceremonies, and community support, where we can see that “to sow, the children are taught that sowing is done with the neighbours’ help, in a *mingawo* [the cooperation of others], because it is a cooperative effort. But, first a supplication is made to *günechen* . . .”

(K5M [67:67]). Here, the cooperation of others (*mingaco*) is valued, in both sowing and harvesting. It may be observed that the spiritual link with *günechen* is a factor that marks activities in the community environment because a supplication is made before starting on farm work. The natural dimension of the sowing time is based, in turn, on observation of the moon's cycle: defining the best moment for sowing because "the full moon is the best time to sow successfully. It must be so because once I planted tomatoes at the new moon and they grew this small; so, then I believed what I had been taught. . ." (K1L [281:281]). Here, we observe a constant relation between the natural environment and learning how to carryout farm work.

The frequency for harvest time is 14.1%. Here, the *kimches* stress the strong social links between families to do the harvesting, travel to the town to sell their produce, and store food for the winter. In this respect, one of the *kimches* said: "When the wheat is harvested, the neighbours and the children help. They organise themselves to go to the town to sell the wheat . . ." (K5M [67:67]). At harvest time children and adolescents are encouraged to take part, helping their parents. This makes it a suitable opportunity for training the new generations, who interact with the adults of the community. A parallel is created among changes in the natural environment, people's lives, and the education of children and adolescents.

Periods of the Day (*Antü*) Category

The *periods of the day* category corresponds to a conceptualisation of the sun's course observed from sunrise to sunset. Table 2 shows the codes for the classification used by the *kimches*.

The frequency for *wün* is 19.1%. For the *kimches*, it corresponds to the first moment of the day, and occurs between 4 a.m. and 6 a.m., before the sun completely appears. The concept of *wün* is taught to children so they learn to start their daily activities because, for the *kimches*, "it is very important for the Mapuche to give thanks to *günechen* for the new day. . . . it is the first thing he must do when the day begins" (K1L [42:42]). Here, we see that a supplication is made to *günechen* during the *wün* to give thanks and pray for a good day. In this way, children and young people are encouraged to develop an attitude based on respect for nature and supernatural forces, such as *günechen*. Thus, the *wün* is a period of the day when the individual's spiritual relation with nature and his social environment is strengthened.

TABLE 2
Periods of the Day (*Antü*)

Code	%
Pün	25.3
Rangt <i>antü</i>	23.4
Wün	19.1
Pelliwün	19.1
Kemin <i>antü</i>	12.8
Total	100.0

Note: Prepared using ATLAS.ti software (ATLAS.ti GmbH, Berlin, Germany).

The frequency for *püliwen*, like that for *wün*, is 19.1%. The *püliwen* follows the *wün*, and is the time of actual sunrise. The *kimches* stress the importance of starting work during *püliwen*, so as to avoid negative spiritual problems because “. . . we get up early for our spiritual well-being. This is taught to children especially because, in the *püliwen*, there are good energies . . .” (K2L [85:85]). Thus, both *wün* and *püliwen* are fundamental in everyday life, and the *kimches* say that this establishes a framework for instruction that is complemented by an attitude of respect for nature and spiritually for *günechen*.

The frequency for *rangi antü* is 23.4%. It is a period associated with midday, between 12 p.m. and 2 p.m. The *kimches* consider *rangi antü* to be a time for the family to meet and rest at home. They also say that “In *rangi antü*, the children must take care of the sun; they are taught to go indoors . . .” (K4M [176:176]). Children must be protected from negative spiritual phenomena that occur during this period because “physically, they are not as strong as an adult,” and that is harmful for their physical and spiritual growth.

The frequency for *konün antü* is 12.8%; it is the period associated with sunset: “We say when the sun is setting and it is getting dark; we call that *konün antü*” (K6M [107:107]). From observation of the sun’s rotation, children and adolescents are taught that *konün antü* marks the beginning of the night. On this basis, all outdoor activities are stopped because the daylight falls and night falls. The *kimches* say that people and nature start their period of rest, and that it is fundamental to behave respectfully.

The frequency for *pun* is 25%. For the *kimches*, this is the period related with the onset of darkness: “*pun* is when it gets dark [*sumilu*], and when it is dark we say *puniv püey lu che*” (K5M [68:68]). Thus, *pun* refers to aspects of nature, like darkness, moonlight, and the stars. Socially, it is a period when the family comes together in the home and the children do not go outside: “. . . [D]uring the *pun*, people and nature take their rest . . .” because “the darkness of the night is so that children can rest and grow strong” (K7R [19:19]). Thus, during the *pun*, adults talk to children and adolescents to keep them occupied and give them advice.

Spatial Conceptions Category

The *spatial conceptions category*, shown in Table 3, is associated with places that are significant in the context of the lives of the Mapuche because it represents elements used for the spatial orientation of individuals. For this reason, each of these concepts corresponds to social constructs that are taught to children and adolescents in the family environment.

The frequency for mountains is 34.7%. In communities situated in mountainous areas, the mountains are indicators that identify the start of the seasons of the year. They are spaces where the changing position of the sun can be seen; one of the *kimches* said that, “During summer, the sun appears behind the mountain called Caracól, and when the plants shoot [August], it starts to come back until it reaches another mountain. In this way, it changes its position during the year” (K8C [24:24]). The seasons identified by the mountains are winter, spring, and summer. This allows children and adolescents to be taught the specific places where the sun’s appearance is repeated each year. It is, therefore, fundamental that they should learn to distinguish the places in order to differentiate them in agricultural and stock-raising activities, as well as the celebration of the New Year.

TABLE 3
Spatial Conceptions

Code	%
Mountains	34.7
Xipawe amü	30.6
The home	21.7
Ground for sowing	13.0
Total	100.0

Note: Prepared using ATLAS.ti software (ATLAS.ti GmbH, Berlin, Germany).

The frequency for *xipawe amü* is 30.6%. It is the place where the sun rises—a space possessing natural, social, spiritual, and symbolic characteristics. Thus, the kinches tell us that children and adolescents are taught that the territorial location of *xipawe amü* is in the East. They are also taught, in social terms, that the East is considered to be the direction that orientates everyday activities, such as the morning supplication; according to the kinches, symbolically, everyone needs to learn to orient his first act of the day toward obtaining the energy needed for his everyday activities. This helps to show that “everything is related to nature, although now this knowledge has been slightly lost. But, it is still the custom, for example, to orient the door of the house towards the East, where the sun rises” (K10C [6;6]). Orientation toward the East implies receiving the energy that gives people their physical and spiritual wellbeing, directly related with where they live because their understanding of the world is associated with the natural and supernatural media (Van Kessel, 1996). In other words, *xipawe amü* is not only a physical point in space, but also orients people’s relation with the energies symbolised by the sun, as the giver of life (Juliano, 1984).

The frequency for the home is 21.7%. It serves as a place for social interaction and an element enabling the rhythm of time to be observed and recognised during the day. It is important for children and adolescents to learn to recognise elements that will enable them to measure time. In this context, one of the kinches says, “to know when it was midday, my uncle marked a line on the door, and the sunlight just reached the line” (K4M [80;80]). Thus, the kinches assign importance to the home because of its usefulness in defining periods of time, such as midday, due to its orientation to the East, the *xipawe amü*. Consequently, orienting the door toward the sunrise is associated with measuring time, strengthening spiritual and social links with other people, and respect for nature.

The frequency for sowing ground is 13%. In terms of agricultural work, spaces used for sowing can be identified during winter (*pukem*) and spring (*pewu*). In this context, one kinche remembered that, “when I was a child, people said: You have to sow at the beginning of the *pukem*, in April, because seed sown in April is not lost because there is water . . .” (K1L [251;253]). That the kinche recognised what he observed as a child shows that children are made to learn by direct observation. This also indicates recognition of a social space where people interact and define their day’s work in the different seasonal cycles. Consequently, being able to recognise the right time and space to sow is fundamental for making use of the resources provided by nature.

DISCUSSION

The results indicate that, in the logic of the education of Mapuche children and adolescents, the ideas of time and space are kept alive in family education. A conceptual framework is configured that synthesises social and natural elements to teach the contents, procedures, and attitudes which they need to learn to live in harmony with people and the natural environment, as well as spiritually with *günechen*. Thus, the rationale of Mapuche education responds to the observation of natural phenomena, as a vital element allowing construction of the knowledge that underpins their everyday social practices. In the Mapuche educational tradition, observation of natural phenomena has enabled time and space to be defined as symbols and mechanisms that orient individuals (Eltas, 2010). This has led to seasonal calendars based on beliefs, symbols, and conceptualisations that respond to the life ideologies of the Mapuche. Thus, the end and beginning of the annual cycle are said to occur during the season associated with cold, rain, and sowing (i.e., *pükem* [winter]). This is complemented by the *pewü* (shooting of plants) and the *walüg* (harvesting of fruits), meaning that the *kimches* recognise three seasons of the year: *pükem*, *pewü*, and *walüg* (Torres & Quilaqueo, 2010). From the number of seasons and the conception of the end and beginning of the year, we may conclude that these concepts are based on observation of the *biocyclic* rhythms that form part of the purification and periodic regeneration of life (Eltas, 2004). Thus, the spatial concept *xipawe antü* (where the sun rises) expresses the relation that the *kimches* identify in everyday life, as a horizontal space marking the point in their territory where the sun rises day after day. So, in Mapuche communities, as in the majority of Indigenous peoples, knowledge about the universe is constructed from observation of significant natural elements, such as the sun (Báez & Gómez, 2000). The *xipawe antü* is, therefore, a symbolic space valued by the *kimches* because it represents a place that connects with the positive energies attributed to a higher spirit called *günechen* (Augusta, 1991; Benigar, 1978; Juliano, 1984).

With respect to the procedures used by the *kimches* to delimit time and space, everyday observation is fundamental for defining the right time to sow, for example, or to go on a journey. In other words, procedures are used which that information to be converted into practical, effective knowledge for daily life (Poza & Postigo, 2000). Thus, in the Mapuche conception, the sun, the moon, and the stars are recognised as qualitative indicators that provide information needed for the construction of the concepts of time and space. As a result, then, from the logic of Mapuche education, people depend on the natural environment because from it they obtain the information that supports the construction of knowledge about the categories of time and space. Quite the opposite occurs in school learning in which people are placed in a subject–object opposition and recognise nature as an element to be manipulated and transformed as a resource (Leff, 2001; Olórtegui, 2007; Romero, 1995, 2004).

Turning to attitude, it is found that respect, as an individual value and attitude, is a central element implicit in the Mapuche mode of action. It is an aspect of primordial importance in the education of children and adolescents because it is linked with knowing how one individual should behave toward another, and toward nature (Quilaqueo & San Martín, 2008). Thus, a person–time–space relation is established, based on knowledge that gives notice of the rhythms of nature and the designs of a higher spirit because human beings give meaning to their environment from the world of their everyday lives. For this reason, the *kimches* need to observe, listen to, and interpret nature. They understand, for example, that during *wün*, people must show respect to entities like *günechen*, or that during *rangi antü* children must stay at home. This suggests that

the Mapuche conception of time has similar characteristics to conceptions present in Central American and Andean Indigenous communities; however, these differ in the use that may be given to concepts of space. For example, in Andean knowledge, the term *pacha* is used to refer to both time and space, whereas in Mapuche educational knowledge, the concepts of time and space are used independently with no duplication of their functions. However, greater similarity exists with the rationale that operates in defining the concepts of time and space in Central American Indigenous communities in how the cardinal points are defined (Báez & Gómez, 2000; Florescano, 2000; Morante, 2000). All these elements characterize a rationale that needs to be added to teaching actions in school because “with the recognition of the validity of an Indigenous social model and logic of life, we admit that an alternative model exists which allows us to evaluate and question the dominant model” (Gasché, 2010, p. 114)—a model that seeks only to validate the rationale founded on universal knowledge and values.

A key aspect for attributing relevance to a piece of knowledge, in education, is to contextualise it to give it meaning. In other words, “for the word to have meaning it needs the text, which is its own context, and the text needs the context from which it emanates” (Morin, 1999, p. 14). Thus, the concepts of time and space are configured with epistemological elements present in the *kimches*’ social memory, allowing referents to be created based on the essential ideologies of the Mapuche educational rationale (Quilaqueo, 2012; Quilaqueo & Quintriqueo, 2010; see also Cassier, 1993; Hiernaux, 2007). In this way, for members of a family, these conceptions are constructed and taught based on knowledge of the *kuyf* (past; González, 2004; Huenchulaf et al., 2004) and the *kuyfke zugu* (social memory; Quilaqueo, 2006). In other words, they are conceptions that should be included in school education because in the Western rationale, the conception of time is totally linear (Caldellas, 2009). Thus, to overcome the dominant educational action of school, we consider it to be of primordial importance that the teaching content be based on what Gasché (2010) called *intercultural articulation*—in other words, on procedures that seek to “form persons, with their love and their abilities rooted in indigenous society and culture, who are able to make their way in the dominant society in order to defend the interests of their people” (p. 122). Thus, by breaking down the schemes of traditional schooling through a critical and liberating kind of education (Freire, 2007; Kleyn, 2010), it will be possible to overcome the supremacy of the causal, technical, and mechanistic rationale to educate children and adolescents in both Indigenous and scientific knowledges. Finally, if both emotional and rational aspects are considered, the emotional does not dissociate the ability of people to interpret and understand the world of everyday life because it is a quality that determines ways of relating to, understanding, and observing the world (Maturana, 2001). In more general terms, in Indigenous knowledge, individuals do not act with the abstract, scientific logic of ends and means; rather, their reflection is rooted in beliefs, affections, and myths; and their procedures are valid because they do not conflict with the final end sought, which is the survival of the social group.

CONCLUSION

Analysis of how time and space are conceived, from the viewpoint of the *kimches*, permits us to understand that they make daily use of contents, procedures, and attitudes associated with elements belonging to Mapuche family education. Thus, the rationale followed by the *kimches* maintains epistemological differences from the reference frameworks that define the contents of

school curricula. The aspect in which this difference is rooted is of central importance because the construction of the concepts of time and space are based on qualitative components resulting from constant observation and interpretation of the social medium and nature. This allows the construction of knowledge that defines people's attitudes and procedures in the context of their lives. In other words, the system of educational knowledge used by the *kimches* interweaves beliefs, images, codes, and languages that conserve the elements of social memory and are linked, in turn, to the changes experienced by the Mapuche family. In this sense, this knowledge is significant and useful in the communities because it allows the rationalization of everyday activities. Likewise, the information identified in the concepts revealed is not explicit, but emerges as a product of the relation established with nature and with the spiritual forces represented in *günechen*. In this context, considering the value and significance of the categories of time and space in Mapuche family education, the challenge arises of generating epistemological articulation in the framework of intercultural education. This requires the positioning of a horizontal dialogue between systems of knowledge—for example, allowing the categories identified in this study to be incorporated into the natural and social sciences as taught in the schools attended by Mapuche and non-Mapuche children and adolescents.

Finally, the concepts distinguished may contribute to a school curriculum for schools located in Mapuche communities to contextualize their epistemological frameworks and to incorporate the knowledge constructed by sages, or *kimches*, as vital elements for the social and cultural development of individuals. There is a need to overcome the wilful ignorance prevailing in the classroom, which tends to characterize Mapuche educational knowledge as mythical or "things from the past." In general, Indigenous knowledge is a cultural construct that is valid in the communities and, to a lesser degree, in the new contexts of Mapuche life in the urban medium. Thus, the conceptual categories distinguished here may help to consolidate a new pedagogical and didactic focus that will enable a change to be made in the traditional educational relation devised from a monocultural rationale.

REFERENCES

- Aice, O. (2007). Tiempo y espacio en el Tiwanakuyu: Introducción a las concepciones espacio-temporales de los Incas Nómadas [Time and space in the Tiwanakuyu: Introduction to time-space conceptions of the Incas, Nomads]. *Revista Crítica de Ciencias Sociales y Jurídicas*, 16, 383–391.
- Arzuaga, S. (2005). La utilización del estudio de casos en el análisis local [The utilization of case studies in local analyses]. *Región + Sociedad*, 17(32), 107–144.
- Augusta, F. (1991). *Lecturas Arcaicas* [Arcaic lectures]. Temuco, Chile: Editorial Kushi.
- Báez, F., & Gómez, I. (2000). Los equilibrios del cielo y de la tierra. Cosmovisión de los Nahuas de Chicontepec [The balance of heaven and earth: Worldviews of the Nahuas of Chicontepec]. *Revista Iberoamericana*, 5, 79–94.
- Bengot, J. (2004). *La memoria olvidada de los pueblos indígenas. Historia de los pueblos indígenas* [The forgotten memory of Indigenous peoples. History of indigenous peoples]. Santiago, Chile: Publicaciones del Bicentenario.
- Benigar, J. (1978). *La Patagonia piensa* [Patagonia thinks]. Neuquén, Argentina: Editorial Stringa.
- Borges, P., & Luckmann, T. (1994). *La construcción social de la realidad* [The social construction of reality]. Buenos Aires, Argentina: Amorrortu Editores.
- Bisquerra, R. (2000). *Métodos de investigación educativa guía práctica* [Educational research methods toolkit]. Barcelona, Spain: Cova.
- Bisquerra, R. (2004). *Metodología de la investigación educativa* [Methodology of educational research]. Madrid, Spain: La Morala.

- Cárdenas, P. (2005). Propuesta curricular intercultural: Nociones de tiempo y espacio de la cultura Mapuche [Intercultural curriculum proposal: Notions of time and space in the Mapuche culture]. In D. Quilaqueo, S. Quintriqueo, & P. Cárdenas (Eds.), *Educación, currículum e interculturalidad. Elementos sobre formación de profesores en contextos mapuche* (pp. 73–146). Temuco, Chile: Frasis Editores/Catholic University of Temuco, Faculty of Education.
- Cassirer, E. (1983). *Antropología filosófica. Introducción y una filosofía de la cultura* [Philosophical anthropology. Introduction to a philosophy of culture]. Santiago, Chile: Fondo de Cultura Económica.
- Ciudadela, B. (2009). El tiempo como factor cultural y su importancia socioeconómica: Estado del arte y líneas futuras [Time as a cultural factor and its socioeconomic importance: State of the art and future directions]. *Itangahue Capital*, 5, 210–226.
- Corbetta, P. (2003). *Metodología y técnicas de investigación social* [Methodology and techniques of social research]. Madrid, Spain: McGraw-Hill.
- Eliade, M. (2004). *El mito del eterno retorno* [The myth of the eternal return]. Madrid, Spain: Alianza/Emecé.
- Eliás, N. (2010). *Sobre el tiempo* [About time]. Mexico City, Mexico: Fondo de Cultura Económica.
- Eriz, E. (1960). *Diccionario conenado Mapuche-Español. Araucano, Pehuenche, Pampa, Picoche, Ranuelche y Huiliche* [Mapuche-Spanish dictionary (revised). Araucano, Pehuenche, Pampa, Picoche, Ranuelche y Huiliche]. Buenos Aires, Argentina: Universidad Nacional del Sur, Instituto de Humanidades.
- Flück, U. (2004). *Introducción a la investigación cualitativa* [Introduction to qualitative research]. Madrid, Spain: Morata.
- Florezano, E. (2006). La visión del cosmos de los indígenas actuales [The vision of the cosmos of the current Indigenous]. *Revista Desacatos*, 5, 79–94.
- Frenk, P. (2007). *Pedagogía del oprimido* [Pedagogy of the oppressed]. Mexico City, Mexico: Siglo XXI Editores.
- Gámez, X., Acosta, L., & Bernal, H. (2008). Territorio, tecnologías del conocimiento tradicional y desarrollo. Apuntes para la gran amazonía continental suramericana [Territory, technologies and development of traditional knowledge. Notes of the great Amazonian South American continent]. *Revista de Economía Crítica, Bogotá*, 11, 1–27.
- Gasché, J. (2010). De hablar de la educación intercultural a hacerla [From talking about intercultural education to carrying it out]. *Mundo Americano*, 1, 111–134.
- Gavilán, V., & Carrasco, A. (2009). Festividades Andinas y religiosidad en el norte Chileno [Andean and religious festivities in northern Chile]. *Revista Chaquaria*, 41(1), 101–112.
- Giroux, H. (2004). *Teoría y resistencia en educación* [Theory and resistance in education]. Mexico City, Mexico: Siglo XXI.
- González, S. (2004). Mirando a la Pachamama: Globalización y territorio en el Tarapacá Andino [Looking to Pachamama: Globalization and Andean territory in Tarapacá]. *Terraviva*, 12, 43–57.
- Grebe, M. E., Pacheco, S., & Segura, J. (1972). Cosmovisión Mapuche [Mapuche worldview]. *Cuadernos de la Realidad Nacional*, 14, 46–73.
- Hallwachs, M. (1970). *Morphologie sociale* [social morphology]. Paris: Armand Colin.
- Hernández, D. (2007). Tiempo, espacio y transnacionalismo: Algunas reflexiones [Time, space and transnationalism: Some reflections]. *Apuntes de Pedagogía*, 27, 47–69.
- Hirón, J. (2007–2008). El cuerpo y la persona en el espacio-tiempo de los Mayas de los Chenes, Campeche [The body and the person in the space-time of the Chenes Mayans, Campeche]. *Revista Pueblos y Fronteras Digital*, 4, 1–30.
- Houssay, E. (1938). *Une épopée indienne. Les Araucans du Chili* [An Indian epic. The Araucanians of Chile]. Paris: Librairie Plon.
- Huanchalaf, E., Cárdenas, P., & Acañal, G. (2004). *Nociones de tiempo y espacio en la cultura Mapuche: Guía docente para el profesor nivel básico I* [Notions of time and space in the Mapuche culture: Teaching guide for professors of basic level I]. Santiago, Chile: LOM.
- Julliano, M. (1984). Algunas consideraciones sobre el ordenamiento tiempo-espacial entre los Mapuches [Some thoughts on the time-space arrangement between the Mapuche]. *Boletín Americanista*, 34, 125–152.
- Kieya, T. (2010). Cultural mismatch in Haudenau (Iroquois) communities: The role of culture, race, and language in schools. *Dispersa: Indigenous and Minority Education: Studies of Migration, Integration, Equity, and Cultural Survival*, 4, 217–234.
- Leff, E. (2001). Espacio, lugar y tiempo. La reapropiación social de la naturaleza y la construcción local de la racionalidad ambiental [Space, place and time. The social reapropriation of nature and the local construction of environmental rationality]. *Nueva Sociedad*, 175, 28–42.

- Mangu, A. (1994). Pacha: Un concepto andino de espacio y tiempo (Pacha: An Andean concept of space and time). *Revista Española de Antropología Americana*, 24, 155–189.
- Maturana, H. (2001). *Emoción y lenguaje en educación y política* (Emotion and language in education and politics). Santiago, Chile: Dolmen Ensayos.
- McMillin, L., & Schmaehar, S. (2005). *Investigación educativa* (Educational research). Madrid, Spain: Pearson.
- Ministry of Education. (2012). *Bases curriculares educación básica* (Bases of a basic education curriculum). Santiago, Chile: Government of Chile.
- Monteserrell, P. (2004). *Sociología de la memoria* (Sociology of memory). Buenos Aires, Argentina: Ediciones Nueva Visión.
- Morano, R. (2000). El universo mesoamericano conceptos integradores (The integratal concepts of the Mesoamerican universe). *Revista Desarrollo*, 5, 31–44.
- Merin, E. (1999). *Los siete saberes necesarios para la educación del futuro* (The seven complex lessons in education for the future). Paris, France: Santillana/UNESCO.
- National Institute of Statistics. (2003). *Síntesis de resultados censo 2002—Comisión nacional del XVII censo de población y de vivienda* (Summary of 2002 census results - XVII National Commission census of population and housing). Santiago, Chile: Government of Chile.
- Ortega, J. (2007). Racionalidad Amazónica y racionalidad occidental (Amazonian rationality and Western rationality). *Revista de Filosofía Tiaman*, 59, 240–244.
- Paillé, P., & Mucchielli, A. (2010). *L'analyse qualitative en sciences humaines et sociales* (The qualitative analysis in social sciences and humanities). Paris: Armand Colin.
- Pizaro, J. (2005). *El mundo de la vida, Husserl y Habermas* (The lifeworld: Husserl and Habermas). Santiago, Chile: Ediciones Universidad Católica Silva Henríquez.
- Pozo, J., & Postigo, Y. (2000). *Los procedimientos como contenidos recíprocos* (Classroom content procedures). Barcelona, Spain: Edubé.
- Quilaqueo, D. (2006). Valores educativos Mapuches para la formación de persona desde el discurso de kinches (Mapuche educative values in teaching children and adolescents from kinche discourse). *Estudios Pedagógicos*, 32, 73–86.
- Quilaqueo, D. (2010). Racionalidad de los saberes educativos Mapuches apoyada en la memoria social de los kinches (Mapuche educational knowledge: Rationality based on the social memory of kinches). In D. Quilaqueo, C. Fernández, & S. Quintriquo (Eds.), *Interculturalidad en contexto mapuche* (pp. 61–88). Nouquén, Argentina: Felicit.
- Quilaqueo, D. (2012). Saberes educativos Mapuche: Racionalidad apoyada en la memoria social de los kinches (Mapuche educational knowledge: Rationality supported in the social memory of the kinches). *Revista Arce*, 50(5), 2012.
- Quilaqueo, D., & Quintriquo, S. (2010). Saberes educativos Mapuches: Un análisis desde la perspectiva de los kinches (Mapuche educational knowledge: An analysis from the perspective of the kinches). *Polis, Revista de la Universidad del Bío-Bío*, 9(26), 337–360.
- Quilaqueo, D., Quintriquo, S., & Cárdenas, P. (2005). *Educación, currículo e interculturalidad. Elementos sobre formación de profesores en contexto Mapuche* (Education, curriculum and interculturality. Elements of teacher training in the Mapuche context). Temuco, Chile: Frayes Editores/Catholic University of Temuco, Faculty of Education.
- Quilaqueo, D., & San Martín, D. (2008). Categorización de saberes educativos Mapuches mediante la Teoría Fundamentada (Categorization of Mapuches' educational knowledge through grounded theory). *Estudios Pedagógicos*, 34, 151–168.
- Quintriquo, S., & McGinity, M. (2009). Implicancias de un modelo curricular monocultural en la construcción de la identidad sociocultural de alumnos/as Mapuches de la IX región de La Araucanía, Chile (Implications of a monocultural curriculum model in the construction of a socio-cultural identity of Mapuche students of the 9th Araucanía Region, Chile). *Estudios Pedagógicos*, 35, 173–188.
- Reyes, L. (2008). *El pensamiento indígena en América. Los antiguos andinos, Mayas y Nahuas* (Indigenous thought in America. The ancient Andean, Mayan and Nahuas). Buenos Aires, Argentina: Editorial Bóvora.
- Romero, H. (1995). Tarapacá: Espacio analítico (región) o espacio-tiempo cuántico (percepción) (Tarapacá: Analytic space (region) or space-time quantum (perception)). *Revista Ciencias Sociales*, 5, 54–74.
- Romero, H. (2004). América: Símbolos de canto y ecuaciones (America: Symbols of (songs and equations)). *Revista de Ciencias Sociales*, 14, 112–128.
- Rua, J. (1996). *Metodología de la investigación cualitativa* (Qualitative research methodology). Bilbao, Spain: Universidad de Deusto.

- Runge, A., & Peña, D. (2005). Mundo de la vida, espacios pedagógicos, espacios escolares y excentricidad humana: Reflexiones antropológico-pedagógicas y socio-epistemológicas [Lifeworld, learning spaces, educational spaces and human eccentricity: Anthropological-pedagogical and socio-epistemological reflections]. *Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud*, 3, 2-21.
- Sabourin, P. (1997). Perspective sur la mémoire sociale de Maurice Halbwachs [Perspective on the social memory of Maurice Halbwachs]. *Sociologie et Sociétés*, 29, 139-161.
- Stake, R. (2005). *Investigación con estudio de casos* [Case study research]. Madrid, Spain: Morata.
- Strauss, A., & Corbin, J. (2002). *Bases de la investigación cualitativa. Técnicas y procedimientos para desarrollar la teoría fundamentada* [Bases of qualitative research: Techniques and procedures for developing grounded theory]. Medellín, Colombia: Universidad de Antioquia.
- Torres, H., & Quilaqueo, D. (2010). Concepciones de tiempo en el discurso educativo de los *kimches* [Concepts of time in the educational discourse of the *kimches*]. In D. Quilaqueo, C. Fernández, & S. Quintraqueo (Eds.), *Interculturalidad en contexto mapuche* (pp. 257-278). Temuco, Argentina: Educa.
- Trepá, C., & Comas, P. (1998). *El tiempo y el espacio en la dialéctica de las ciencias sociales* [The time and space in social science education]. Barcelona, Spain: Editorial Gedó.
- Triandis, A., Carrero, V., & Soriano, R. (2006). *Teoría fundamentada: La construcción de la teoría a través del análisis interpretativo* [Grounded theory: Theory construction through interpretational analysis]. Madrid, Spain: Centro de Investigaciones Sociológicas.
- Van Kessel, J. (1996). La cosmovisión Aymara [The Aymara world-view]. In J. Hidalgo, V. Schiapucasse, H. Niemeyer, C. Aldunate, & P. Mege (Eds.), *Cultura de Chile: Etnografía sociedades indígenas contemporáneas y sus ideologías* (pp. 169-187). Santiago, Chile: Editorial Andrés Bello.

Daniel Quilaqueo is a Doctor in Sociology, a Titular Professor of the Education Faculty of the Catholic University of Temuco, Chile. He is also Director of the Center for Education Research and Intercultural Indigenous Contexts and the Science Nuclei of the Millennium Science Initiative. He is the Titular Researcher of the Nucleus for Interethnic and Intercultural Studies of the Catholic University of Temuco and an Associate Researcher of the Interuniversity Center for Aboriginal Studies and Research of Laval University, Quebec, Canada. His research work deals with Mapuche educational knowledge and prejudice and perceived discrimination against Chilean Mapuche people. Dr. Quilaqueo is a teacher of educational research and sociology of education.

Héctor Torres is a Doctoral Student in Anthropology at Laval University, Canada. He has a master's degree in Education, and he has published works on education, intercultural education, and Mapuche educational knowledge.