general are highly fragmented, measure more than 3 cm, and are poorly preserved. [illegible] from level V are fragile and bear manganese stains. Those from level Va are slightly [illegible] preserved and show less presence of manganese, even though they are clearly less well [illegible] that those belonging to levels 1, 2, and the upper part of 3.

The number of identified specimens (NISP) calculated for 32 mammals (excepting [illegible] dermal bones, and antlers) in Table 2 shows that the most common species are *Hippo*[illegible] (huemul, 34.37%) and indeterminate deer (larger than huemul, 21.87%), followed by [illegible] (extinct canid, 15.62%), *Lama* (guanaco, 12.5%), *Lycalopex* (red fox, 6.25%) and [illegible] (vizcachita, 6.25%), and *Chaetophractus* (armadillo, 3.12%). The skeletal units [illegible] to Cervidae (antler fragments, vertebrae, metapodials, and autopodials), *Hippo*[illegible] (autopodial and metapodial), *Canis* (metapodial, autopodial and mandible), [illegible] (forelimb), and *Lagidium* (forelimb) belong to the same individual in each case, as [illegible] reassembling fragments and refitting bones. These results suggest a sample reduced [illegible] and space, perhaps collected over just a few periods of settlement. Mylodontinae are [illegible] mainly as dermal bones, with some fragmented bones and teeth. The rest of the [illegible] assemblage is highly fragmented and consists of a wide range of taxonomic categories [illegible] size; the predominant group corresponds in size to *Lama-Hippocamelus*-Cervidae (the [illegible] taxa with the highest minimum number of individuals (MNI)). Bird, fish, and [illegible] mollusk (*Diplodon*) remains are also present, although poorly preserved.

The bones belonging to the majority of the species bear cutmarks and anthropic [illegible] we also noted, in the case of Mylodontidae dermal bones, a particular pattern of burning [illegible] suggests human origin. We infer from the remains that the human occupants enjoyed [illegible] ample diet derived from different types of resources as well as different strategies to [illegible] them, including hunting, fishing, and gathering (plants included).

El Trebol rockshelter bears witness to the early settlement of an Andean forest [illegible] environment in northern Patagonia during the Pleistocene-Holocene transition, perhaps [illegible] small groups and for short periods of time. They exploited a wide variety of mammals, [illegible] extinct and extant today, including megafauna, fish, birds and mollusks. Stone tools [illegible] manufactured on local and non-local materials. The latter imply long-distance travel or [illegible] contacts.

Graciela Montero helped us with the English translation.

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[illegible]ormal Variability in Fishtail Points of [illegible]he Amigo Oeste Archaeological Site, [illegible]omuncurá Plateau (Río Negro, Argentina)

[illegible] *Hermo*[1] *and Enrique Terranova*[2]

[illegible]ords: Fishtail points, Pleistocene/Holocene, north Patagonia

[illegible] Fishtail points (FTPs) are often associated with chronologies ca. 9000–11,500 RCYBP, [illegible] artifacts are good indicators of human populations during the Pleistocene-Holocene [illegible]n in South America. Furthermore, FTPs have a wide geographical distribution and are [illegible] in distant and very different contexts, from Magallanes basin (southernmost America) [illegible]thern Mexico (García Bárcena 1980; Miotti 1995; Nami 2010; Politis 1991).

[illegible] state of research in the Southern Cone shows that these artifacts are usually distributed [illegible]ted artifacts or in assemblages consisting of few individuals, are found in a wide variety [illegible]nments (arid, tropical, temperate, etc.) and different landforms such as paleolakes, [illegible]llers, riversides, coastlines, and mountains.

[illegible] Patagonia, archaeological sites with associated FTPs are located in the Deseado Massif, [illegible] Magellan basin, and Nueva Esperanza areas, while in the Argentine Pampas they are located [illegible] interserrana area and Tandilia range. Until the beginning of research in the Somuncurá [illegible] (Río Negro Province) a short time ago (Miotti et al. 2004, 2010), the intermediate [illegible] between these two areas posed a gap in FTP records.

[illegible] contribution is part of a study about the technologies of the first Americans, which [illegible]prets technology as social processes that combine knowledge, learning, decisions, [illegible] and meanings (Lemonnier 1992). In this article we present the techno-morphological

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characterization of the FTP assemblage from Amigo Oeste archaeological site, [illegible] description of formal attributes and other technological aspects of such artifacts.

Los Dos Amigos Archaeological Locality

The artifacts discussed here were found in the Los Dos Amigos archaeological [illegible] which is located around the homonymous landform formed by two bedrock hills, [illegible] the base of the Arroyo Talagapa–Laguna de Las Vacas basin on the Somuncurá Plateau (Fig. 1). In fieldwork carried out we have documented 116 FTP, 112 of them from the Amigo archaeological site (AW), the western hill at LDA. This topographical feature dominates the lower Arroyo Talagapa basin and surrounding watershed. The assemblage was collected from the AW hilltop (n = 88), slopes (n = 22), and basaltic walls (n = 2) leading up to the hill, while the rest come from other nearby sites LDA-5 (n = 2), LDA-AB (n = 1), and [illegible] Isidoro (n = 1).

Amigo Oeste is characterized by an abundance of surficial lithic material. There [illegible]

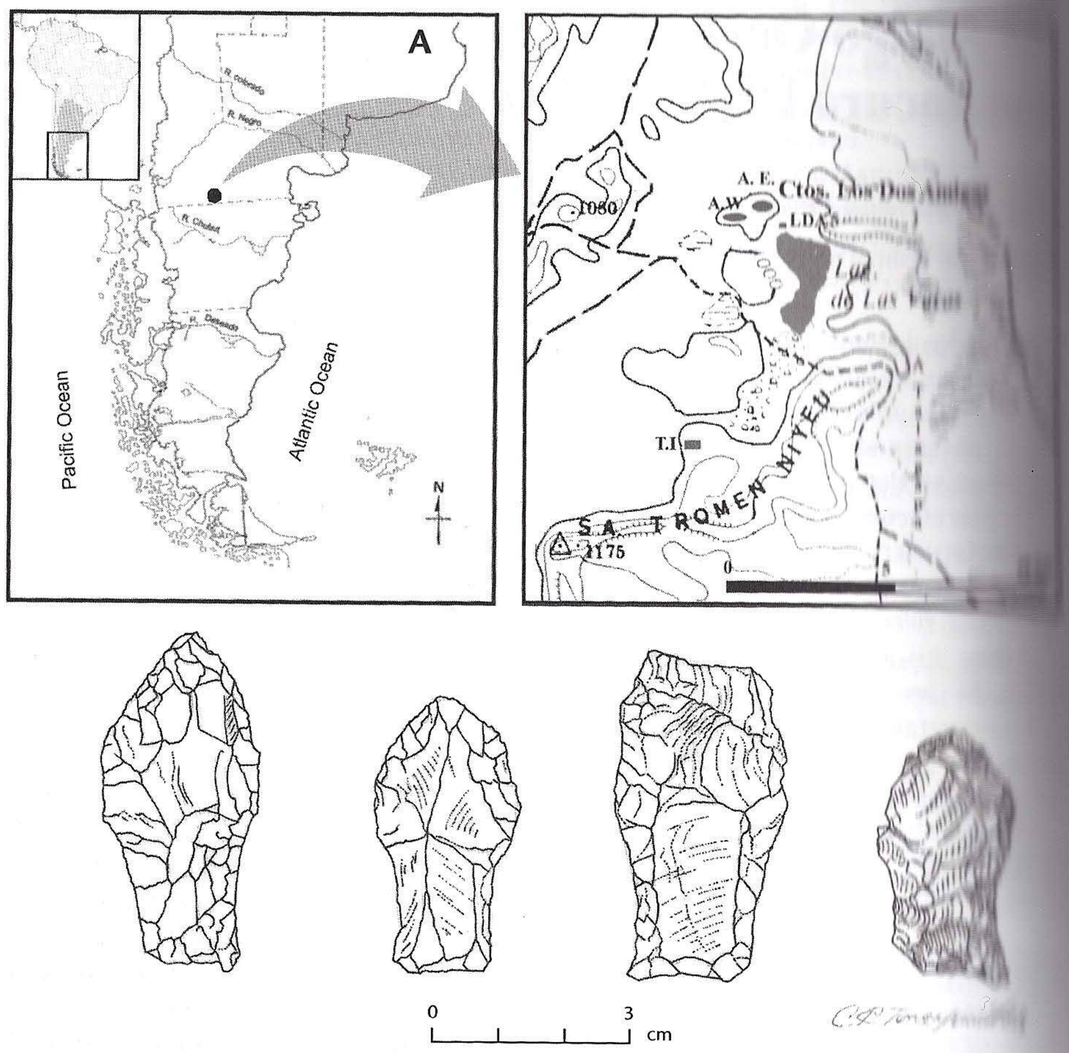

Figure 1. **A, B,** research area referred to in text; **C,** Fishtail points from Amigo Oeste.

[illegible] about 2250 artifacts (cores, debitage, and tools), including FTPs, which constitute [illegible] retouched artifacts. In this respect, AW is the largest and most varied FTP context [illegible]

Amigo Oeste Assemblage

[illegible] AW assemblage of FTPs is fractured (87.1%); only 15 items are complete (12.9%). [illegible] more represented portion (62.9%).

[illegible] materials on which FTPs were made are chalcedony (73.3%), followed by colored [illegible] (12.5%), obsidian (6.9%), and quartz (4.3%). The source of chalcedony could be the [illegible] site, a quarry-workshop located 15 km west of AW. At Aneken, brown chert has been [illegible] outcrops, veins, and pebbles in little streams of the upper basin of Arroyo Talagapa. [illegible] obsidian geochemical studies suggest the possible existence of regional sources for [illegible] material (Miotti et al., this volume).

[illegible] sources of the remaining varieties of raw materials such as pink and red chert [illegible] quartz have not been identified. These raw materials have been recorded at other [illegible] sites of the plateau but in much lower quantities than at AW.

[illegible] formal analysis of the Amigo Oeste FTP assemblage yielded ranges of variation and medians [illegible] shown in Figure 2. Noteworthy is the range of variation in stem length, which is greater [illegible] the variation in other variables. This may reflect the high incidence of this part of the point [illegible] final assemblage, or it may signify great variability in the morphology of the stems.

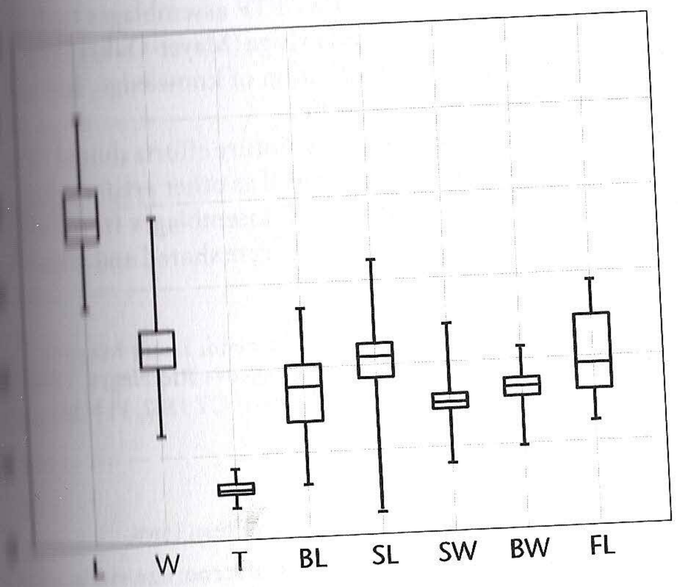

Figure 2. Dimensions in box plots for **L,** length; **W,** width; **T,** thickness; **BL,** blade length; **SL,** stem length; **SW,** stem width; **BW,** basal width; and **FL,** fluting length.

Among stem forms, straight bases (42.72%) and attenuated concave bases (41.75%) are [illegible] common. Correlation between the basal width and stem length shows low intensity but [illegible] significance ($r = 0.2918$; $p = 0.0225$). The intensity of the correlation is higher between [illegible] width and base width, with a very high significance ($r = 0.4906$; $p = 0.00002$).

Fluting appears in high proportions (60%) on either one (36.28%) or both faces [illegible] Fluting presence is neither directly related to any other variable, nor with the [illegible] of completion of pieces. This suggests that fluting was an optional means to solve

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hafting. Another feature observed is that the final shaping of bases was made through fine retouching (see Nami 2010 for similar remarks related to other FTP assemblages).

Conclusions

The FTP data set from Amigo Oeste yields the following conclusions.

1. Raw materials are predominantly from local or regional sources, and all are of very good quality. It is noteworthy that raw materials with a long trajectory, such as red chert and quartz crystal, are frequently present at early sites and have been interpreted as socially important or symbolic goods (Nami 2009).
2. Dimensions of the analyzed specimens show highly significant, moderately positive correlations between different parts of the stems, reflecting a degree of uniformity associated with the FTP hafting process.
3. The AW sample exhibits a high incidence of fluting, which seems to be an optional technical step related to basal thinning.
4. Retouch is the most common technique used to shape the concave base, regardless of the presence or degree of fluting.
5. The high incidence of stems recovered supports the idea that the site could have functioned as a workplace for replacing points. Based on the assemblage of flakes from the site, we propose that points were made and edges reactivated.

These observations become relevant when they recur in other FTP assemblages such as Fell (Bird 1988), La China, El Sombrero (Flegenheimer 2004), and El Inga (Mayer-Oakes 1986). The pervasiveness betokens a technological conception, constellation of knowledge, techniques, and tools shared by human groups on a hemicontinental scale.

Finally, this work was based on a specific assemblage of tools. Future efforts should be made to study techniques and sequences of manufacturing FTPs as well as other artifacts found in early contexts. They should focus especially on comparing FTP assemblages from different regions to enlarge our knowledge of which aspects of technology were shared and which were confined to local communities.

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