



**HAL**  
open science

# Pin consumption on the shores of Lake Neuchâtel (Switzerland) during the palafittic Late Bronze Age

Viktoria Fischer

► **To cite this version:**

Viktoria Fischer. Pin consumption on the shores of Lake Neuchâtel (Switzerland) during the palafittic Late Bronze Age. *Archaeodyn 7 millennia of territorial dynamics: settlement pattern, production and trades from Neolithic to Middle Ages*, Jun 2008, Dijon, France. halshs-00429793

**HAL Id: halshs-00429793**

**<https://shs.hal.science/halshs-00429793>**

Submitted on 4 Nov 2009

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

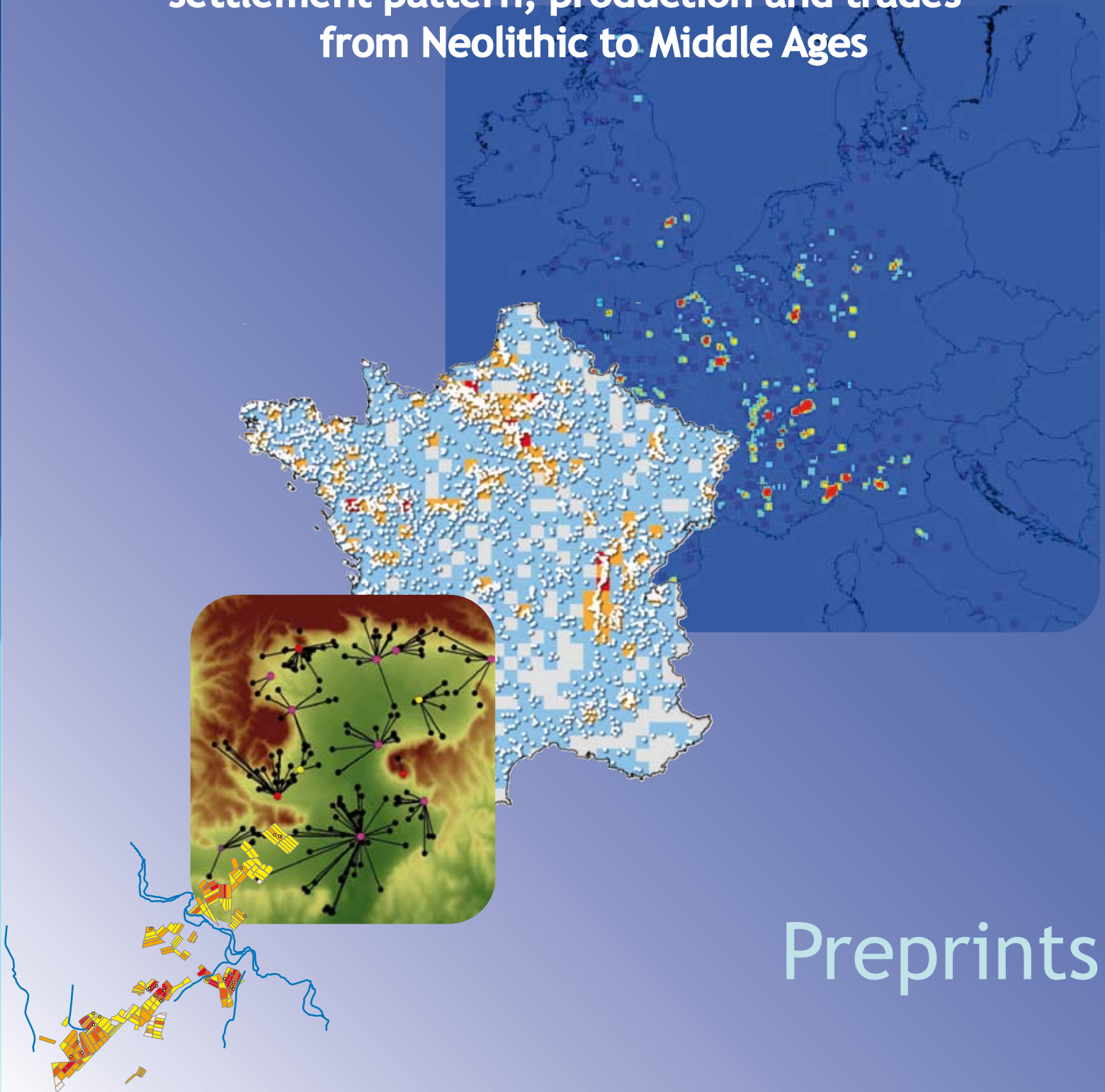
L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

ACI "Spaces and territories" 2005-2007  
Final conference - Dijon, 23-25 june 2008

# ARCHAEDYN

*7 millennia of territorial dynamics*

**settlement pattern, production and trades  
from Neolithic to Middle Ages**



Preprints

## Pre-proceedings directed by

**Cristina GANDINI** (*UMR 8546 AOROC, ENS Ulm Paris*)

**François FAVORY\***

**Laure NUNINGER\***

## Organisation committee

**Cristina GANDINI,**

**Laure SALIGNY\*\*\***

**Laëtitia BASSEREAU\*\***

**Jean-Marc BOURGEON\*\*\***

**Brigitte COLAS\*\***

**Marion LANDRÉ\*\*\*\***

**Isabelle MOURET\*\*\*\***

**Sophie BUI\*\*\*\***

**Sylvie COSTILLE-VAREY\***

**Nathalie PUILLET\***

## Scientific committee co-chairs

**François FAVORY\***

**Claude MORDANT\*\***

**Laure NUNINGER\***

\* *UMR 6249 ChronoEnvironnement*

\*\* *UMR 5594 ARTeHIS*

\*\*\* *MSH Dijon UMS 2739*

\*\*\*\* *MSH C. N. Ledoux, Besançon USR 3124*

ACI « Spaces and territories » 2005-2007

Contract ET 28

**Spatial dynamics of settlement and natural resources :  
toward an integrated analysis over the long term  
from Prehistory to Middle Ages**

*Final Conference – University of Burgundy, Dijon, 23-25 June 2008*

# ARCHÆDYN

*7 millennia of territorial dynamics*

*settlement pattern, production and trades  
from Neolithic to Middle Ages*

## Preprints

## REMERCIEMENTS

Le collectif Archædyn remercie les institutions qui ont bien voulu accepter d'accueillir les réunions de son groupe de pilotage, de ses séminaires, de ses ateliers et son colloque final.

### Groupe de pilotage :

Université Paris IV Sorbonne, Paris  
INHA, Paris  
UMR 8546 ENS Ulm-CNRS, Paris

### Tables rondes :

DRAC Franche-Comté, Besançon  
ZRC SAZU, Ljubljana (Slovénie)  
MSH Clermont-Ferrand

### Ateliers :

INHA, Paris  
MMSH Aix-en-Provence  
UMR 5594 - ArteHis Dijon  
MSHE Besançon  
MSH Clermont Ferrand  
MSH Tours  
UMR 6130 CEPAM, Sophia Antipolis

### Colloque final :

Université de Bourgogne

Le collectif Archædyn tient également à remercier individuellement tous les personnels chercheurs et administratifs qui ont fortement contribué à l'organisation de toutes ces rencontres et assurer le recrutement des vacataires.

Sylvie COSTILLE-VAREY, Nathalie PUILLET *UMR 6249, Besançon*  
Monique SEGURA *UMR 6173, Tours*  
Laëtitia BASSEREAU, Brigitte COLAS *UMR 5594, Dijon*  
Isabelle MOURET, Marion LANDRE, Soizic VIAOUËT, Sophie BUI *USR 3124, Besançon*  
Jean-Marc BOURGEON *UMS 2739, Dijon*  
Sasa CAVAL, IAPS ZRC SAZU *Ljubljana*  
Béatrice FIXOIS *UMR 7041 Nanterre*  
Martine JOLY, M. MASSE, M<sup>me</sup> FERNOUX *Univ. Paris IV / INHA, Paris*

Pour le colloque final, les organisateurs remercient également chaleureusement :

- les personnels de l'Université et du Crous de Bourgogne pour leur soutien logistique et administratif et les vacataires recrutés pour cette manifestation ;
- la ville de Dijon pour la réception du 23 juin ;
- Patricia ALEXANDRE pour les traductions en anglais et les relectures des textes anglais de l'équipe ArchæDyn, réalisée dans des délais extrêmement courts ;
- Bertrand TURINA pour la mise en page des pré-actes, également réalisée dans des conditions extrêmes ;
- Christian VERNOU, conservateur du Musée archéologique et ses collaborateurs pour l'organisation de la soirée inaugurale du colloque ;
- L'ensemble vocal « Le Laostic » et son chef de chœur, François TAINURIER ainsi que la paroisse Saint Bénigne qui a bien voulu accueillir leur concert.

## ACKNOWLEDGMENTS

The ArchaeDyn collective thanks the institutions which have kindly agreed to receive the meetings of his supervisory committee, seminars, workshops and final conference.

### Supervisory committee:

Université Paris IV Sorbonne, Paris  
 INHA, Paris  
 UMR 8546 ENS Ulm-CNRS, Paris

### Round-tables:

DRAC Franche-Comté, Besançon  
 ZRC SAZU, Ljubljana (Slovenia)  
 MSH Clermont-Ferrand

### Workshops:

INHA, Paris  
 MMSH Aix-en-Provence  
 UMR 5594 - ArteHis Dijon  
 MSHE Besançon  
 MSH Clermont-Ferrand  
 MSH Tours  
 UMR 6130 CEPAM, Sophia Antipolis

### Final conference:

University of Bourgogne

The Archaeodyn collective would also like individually to thank all the researchers and administrative staff who greatly contributed to the organisation of all these meetings and to assure the recruitment of the temp staff.

Sylvie COSTILLE-VAREY, Nathalie PUILLET *UMR 6249, Besançon*  
 Monique SEGURA *UMR 6173, Tours*  
 Laëtitia BASSEREAU, Brigitte COLAS *UMR 5594, Dijon*  
 Isabelle MOURET, Marion LANDRE, Soizic VIAOUËT, Sophie BUI *USR 3124, Besançon*  
 Jean-Marc BOURGEON *UMS 2739, Dijon*  
 Sasa CAVAL, IAPS ZRC SAZU *Ljubljana*  
 Béatrice FIXOIS *UMR 7041 Nanterre*  
 Martine JOLY, M. MASSE, M<sup>me</sup> FERNOUX *Univ. Paris IV / INHA, Paris*

Regarding the final conference, the organizers also warmly thank :

- the University staff and the Crous of Burgundy for their logistical and administrative support and recruited temps for this event ;
- the city of Dijon for the reception of the June 23 ;
- Patricia ALEXANDRE for english translations and corrections of the texts of the ArchaeDyn's team which have been done according to extremely short delays ;
- Bertrand TURINA for the layout of the preprints which have been done according to extreme conditions too ;
- Christian VERNOU, Curator of the archaeological Museum and his collaborators for the organisation of the inaugural evening of the conference ;
- The vocal ensemble "Laostic" and his choral leader, François TAINURIER as well as the Saint Bénigne parish who agreed to host their concert.

## SOMMAIRE CONTENTS

2	Scientific committee
2	Steering committee
3	Partners
6	Presentation ArchaeDyn
8	ArchaeDyn's members
13	Acknowledgments
15	Program
18	Presentation concert Laostic

## 19 Articles

---

21	Introduction
----	--------------

### 23 **Session 1 “Methods and tools of spatial analysis” (workgroup 4)**

---

#### *Communications orales* Oral communications

25	<i>L. SALIGNY, L. NUNINGER, K. OSTIR, N. POIRIER, E. FOVET, C. GANDINI, E. GAUTHIER, Z. KOK ALJ, F. TOLLE with the collaboration of the ArchaeDyn team</i> Models and tools for territorial dynamic studies
45	<i>DUCKE Benjamin, KROEFGES Peter C.</i> Managing complexity the simple way: examples from GIS modelling of human behaviour.
55	<i>KOHLER Timothy</i> Agent-Based Modeling and its Application to Prehispanic Settlement Ecodynamics in the Central Mesa Verde Region: Testing Optimality in Site Location in the Archaeological Record.
63	<i>HILPERT Johanna, ZIMMERMANN Andreas</i> Estimations of population densities from the Neolithic up to the 19th century: methods and results.
71	<i>ZIMMERMANN Andreas, HILPERT Johanna</i> Interpretive dimensions and variability of population densities

### 79 **Session 2 “Catchment areas, terroirs and community lands” (workgroup 1)**

---

#### *Communications orales* Oral communications

81	<i>POIRIER Nicolas, GEORGES-LEROY Murielle, TOLLE Florian, FOVET Elise</i> The spatio-temporal dynamic of agricultural areas, from Antiquity to modern period (ArchaeDyn Project)
95	<i>BARGE Olivier, CASTEL Corinne</i> Subsistence, sustainability and population at Tell Al-Rawda: a 3rd Millennium BC town in the Syrian steppe/ Autosuffisance alimentaire et population à Tell Al-Rawda: une ville du troisieme millenaire dans la steppe syrienne
107	<i>BINTLIFF John</i> Catchments, settlement chambers and demography: case studies and general theory in the Greek landscape from prehistory to early modern times.

#### *Posters*

119	<i>AUSSEL Sandra, GOGUEY Dominique, PAUTRAT Yves, SALIGNY Laure, CHARMOT A., MORDANT Claude, NUNINGER Laure</i> Spatial analysis of archaeological sites in the Châtillonnais forests (Côte-d’Or, France).
127	<i>FOVET Elise, POIRIER Nicolas</i> Characterization of Agrarian Resources for Archaeological Applications (ArchaeDyn Project).
133	<i>LE BRAS-GOUDE Gwenaëlle</i> Diet of ancient and middle Neolithic populations in the northwest of Mediterranean. Anthropological and isotopic studies

**139 Session 3 “Settlement patterns, networks and territories” (workgroup 2)***Communications orales* Oral communications

- 141 *Frédérique BERTONCELLO, Elise FOVET, Cristina GANDINI, Frédéric TRÉMENT, Laure NUNINGER with the collaboration of the members of Workgroup 2*  
The spatio-temporal dynamics of settlement patterns from 800 BC to 800 AD in Central and Southern Gaul: models for an interregional comparison over the long term
- 155 *BURILLO Francisco, ARENAS Jesús, PICAZO Jesús, ORTEGA Julián, POLO Clemente, VILLAGORDO Carolina, LÓPEZ Raul, SAIZ Esperanza*  
The uncorrupting mountain. Historical dynamics in the Iberian Mountain Range from 5.500 B.C. to 1.800 A.D.
- 167 *POSLUSCHNY Axel*  
GIS as a means to investigate «Princely Sites», Space and Environs. New ways to answer old questions.
- 175 *VAN DEN BOSSCHE Benjamin, MARCIGNY Cyril*  
Changing settlement patterns in the Normandy countryside.

*Posters*

- 187 *KOROBOV Dmitry*  
Using ArcGIS Spatial Analyst for the investigation of the system of habitation in the Kislovodsk basin (South of Russia).
- 193 *NOUVEL Pierre, BARRAL Philippe*  
Rural settlement dynamic during Iron Age in Central Gaul: the excavation and fieldwalking data head to head

**195 Session 4 . “Diffusion of raw materials and manufactured objects” (workgroup 3)***Communications orales* Oral communications

- 197 *GAUTHIER Estelle, WELLER Olivier, NUNINGER Laure et avec la collaboration de : GABILLOT Maréva, QUILLIEC Bénédicte, PETREQUIN Pierre*  
Models for the study of the consumption and the circulation of resources and products in France and Western Europe during the Neolithic and the Bronze Age (ArchaeDyn project)
- 211 *CORNIQUET Claire*  
Mobility and circulation of knowledge among potters of the Arewa (South-Western Niger): impact of the frameworks of practice on the spatial distribution of ceramics' techniques.

*Posters*

- 221 *FISCHER Viktoria*  
Pin consumption on the shores of lake Neuchâtel (Switzerland) during the palafittic Late Bronze Age.
- 225 *WELLER Olivier, BRIGAND Robin, NUNINGER Laure*  
Spatial analysis of the Salt Spring exploitation in Moldavian Pre-Carpathic Prehistory (Romania).

**233 Session 5 . Synthèse/Open synthetic session***Communication orale* Oral communication

- 235 *FAVORY François, NUNINGER Laure*  
Bilan général du programme triennal ArchaeDyn/synthesis of ArchaeDyn project ArchaeDyn 2005-2007 : ambitions, achievements and accomplishments



# PIN CONSUMPTION ON THE SHORES OF LAKE NEUCHÂTEL (SWITZERLAND) DURING THE PALAFITTIC LATE BRONZE AGE

**Viktoria FISCHER**

Université de Genève

Laboratoire d'archéologie préhistorique et d'histoire des peuplements

Rue Gustave-Revilliod 12

Case postale

CH-1211 Genève 4

Tél. : + 41 22 379 6976

Fax : + 41 22 379 3194

Viktoria.Fischer@anthro.unige.ch

Université de Bourgogne

UMR 5594 « Archéologie, Terre, Histoire, Sociétés »

6, Boulevard Gabriel

21000 Dijon

Tél. : 03 80 39 57 97

Fax : 03 80 39 57 87

umr5594@u-bourgogne.fr

**KEY WORDS :** Late Bronze Age, Switzerland, littoral settlements, bronze consumption

The poster proposed here has been done within the framework of a PhD Thesis on palafittic bronzes discovered on littoral settlements of Lake Geneva and the Three Lakes. This PhD Thesis is prepared at the University of Geneva, under the direction of Professors Marie Besse and Gilbert Kaenel, and at the University of Bourgogne, under the direction of Professor Claude Mordant.

Below are some additional annotations on the included tables, which are complementary to the information presented in the poster.

## Problematics and sample

**Table 1**

The data in Table 1 is part of Figure 2, which is presented in the poster. This table illustrates the heterogeneity of our sample, which contains dendrodated collections resulting from recent excavations (Auvernier NE/Nord: RYCHNER 1987, Cortaillod NE/Est: ARNOLD 1986), a recent dendrodated collection completed with old collections (Hauterive NE/Champgréveyres: RYCHNER-FARAGGI 1993), as well as old collections. The latter are in some cases localised by recent prospecting (Grandson VD/Corcelettes-Les Violes: CORBOUD *et al.* à paraître, FISCHER 2003), while in others they are not (Auvernier NE: RYCHNER 1979). Sizes of collections also differ considerably. Numbers of palafittic pins vary from 50 to 500. This heterogeneity implies some care when interpreting results.

Archaeological collection	Dendrochronology (BC)	Number of palafittic pins (Ha B)	Number of complete pins (identified types)	Total number of pins	Total number of bronze objects
Auvernier NE/Nord	878-850	45	46	60	425
Cortaillod NE/Est	1010-955	53	56	106	1158
Hauterive NE/Champgréveyres (old collections included)	1050-1030, 990-980, 910-876	285	453	641	6240
Grandson VD/Corcelettes-Les Violes (old collections)	-	499	734	926	2903
Auvernier NE (old collections)	-	229	379	396	1607
<b>Total</b>	-	<b>1111</b>	<b>1668</b>	<b>2129</b>	<b>12333</b>

Table 1: Our sample of palafittic pins.

## Methods

**Table 2**

Table 2 is partially included on our poster, via Figure 3, and shows how the analysis could also be extended to pins dated with less accuracy than phase Ha B (palafittic Late Bronze Age), as it ranges from the Late Bronze Age or even from the Bronze Age in general (DAVID-ELBIALI, MOINAT 2005: 613-623). As the probabilities of these pins to belong to one of the 5 phases of the palafittic Late Bronze Age are quite small, they do not really

influence the perception of the evolution of bronze consumption in time or space. However, this low probability could become significant with the growth of the number of sites, and quantities of objects.

We could also include in our analysis relative numbers of pins dated from Early Bronze Age, Middle Bronze Age or prepalafittic Late Bronze Age. We would assume that these pins do not testify to a real occupation of the shores, but are intentionally conserved relics. Their relative number would then be considered as covering a 250-year long period, which represents the duration of the palafittic Late Bronze Age.

Table 2: Weighting allocated to a pin in each phase of the palafittic Late Bronze Age, according to the reliability of its dating.

	former Ha B1 (1050-1000 B.C.)	classic Ha B1 (1000-950 B.C.)	Ha B2 (950-900 B.C.)	former Ha B3 (900-850 B.C.)	recent Ha B3 (850-800 B.C.)
Pin dated from Ha B1	1/2	1/2	0	0	0
Pin dated from Ha B2	0	0	1	0	0
Pin dated from Ha B3	0	0	0	1/2	1/2
Pin dated from the palafittic Late Bronze Age (Ha B)	1/5	1/5	1/5	1/5	1/5
Pin dated from the Late Bronze Age	1/10	1/10	1/10	1/10	1/10
Pin dated from the Bronze Age	1/30	1/30	1/30	1/30	1/30

## Identifying “temporal trajectories”

**Table 3**  
**Table 4**

Relative numbers of pins, in Table 4, have been obtained by interpreting the real number of pins in Table 3 together with the data in Table 2. We have used the data of Table 4 to produce Figure 4 on the poster.

To illustrate the estimation of real numbers by relative numbers of pins, here follows a concrete example of calculation: Auvernier NE has 44 pins of Ha B1, 46 pins of former Ha B1 and 1 pin dated globally from Ha B. The relative number of pins during former Ha B1, for example, is  $(44 \times 0.5) + 46 + (1 \times 0.2) = 68.2$ . Indeed, the probability of a Ha B1 pin to belong to the former Ha B1 is 50% and that of a Ha B pin is 20% (Table 2).

Table 3: Number of pins in each collection, dated by typo-chronology (corrected by dendro-chronology when possible).

NUMBER OF PINS	"Ha B"	"Ha B1"	"former Ha B1"	"classic Ha B1"	"Ha B2"	"Ha B3"	"former Ha B3"	"recent Ha B3"	Total
Auvernier NE/Nord	0	1	0	1	0	0	43	0	45
Cortailod NE/Est	0	0	0	53	0	0	0	0	53
Hauterive NE/Champréveyres	0	31	147	87	0	16	4	0	285
Grandson VD/Corcelettes-Les Violes	0	90	149	103	0	157	0	0	499
Auvernier NE	1	44	46	63	0	75	0	0	229
									1111

Table 4: Relative number of pins in each phase of the palafittic Late Bronze Age, obtained by interpreting the real number of pins in Table 3 together with the data in Table 2.

RELATIVE NUMBER OF PINS	Auvernier NE/Nord	Cortailod NE/Est	Hauterive NE/Champréveyres	Grandson VD/Corcelettes-Les Violes	Auvernier NE
1050-1000 (former Ha B1)	0.5	0	162.5	194	68.2
1000-950 (classic Ha B1)	1.5	53	102.5	148	85.2
950-900 (Ha B2)	0	0	0	0	0.2
900-850 (former Ha B3)	43	0	12	78.5	37.7
850-800 (recent Ha B3)	0	0	8	78.5	37.7

## Spatial dynamics

**Table 5**

Table 5 contains the data used to create maps of Figure 2 and especially of Figure 5 on our poster.

When realising our maps, we have assumed that excavated surfaces are representative of the inhabited ones (“estimated settlement surface” on Figure 5: ARNOLD 1990: 139, PRIMAS 1995: 201-224, RYCHNER 1987: 11-19). We have also supposed that bronze consumption is constant on the whole area of a site which is, of course, a working assumption and seems very unlikely.

Auvernier NE is a particular case: the old collections described as coming from the bay of Auvernier during the XIXth century (RYCHNER 1979: 17) have been located in the district centre of Auvernier NE. The estimated settlement surface covers the part of the bay where bronze villages have been recently excavated (Auvernier NE/Nord, Auvernier NE/Brena: RYCHNER 1987, Auvernier NE/Les Graviers: SCHIFFERDECKER 1982: 55-57).

To generate our maps, we have divided the relative number of pins of a particular phase (Table 4) by the total number of palafittic pins (Table 1). Indeed, all pins dated less accurately than Ha B have been excluded from the calculation of relative numbers.

Archaeological collection	X (CH 1903)	Y (CH 1903)	Estimated settlement surface (m2)	Proportion of the relative number of pins dated from 1050-1000 BC over the total number of palafittic pins (%)	Proportion of the relative number of pins dated from 1000-950 BC over the total number of palafittic pins (%)
Auvernier NE/Nord	557125	202475	12000	1.1	3.3
Cortailod NE/Est	555250	198750	8700	0	100
Hauterive NE/Champréveyres	564450	206350	8700	57	36
Grandson VD/Corcelettes-Les Violes	541200	185500	50000	38.9	29.7
Auvernier NE	557013 (district)	203000 (district)	44000 (bay of Auvernier)	29.8	37.2

Table 5: Data used to generate our maps (geographical coordinates: CORBOUD et al. À paraître, HOCHULI, NIEFFELER, RYCHNER 1998: 372, 376-377, 379).

## Conclusions

As a conclusion, we can add that estimation of real numbers by relative numbers and their study through time and space is an accurate methodology in the approach of huge quantities of objects belonging to old collections dated by typochronology.

## Bibliography

ARNOLD 1986

Arnold B. - *Fouille subaquatique et photographie aérienne*. Saint-Blaise : Eds du Ruau. (Archéologie neuchâteloise ; 1, Cortaillod-Est : un village du Bronze final ; 1).

ARNOLD 1990

Arnold B. - *Structure de l'habitat et proto-urbanisme*. Saint-Blaise : Eds du Ruau. (Archéologie neuchâteloise ; 6, Cortaillod-Est : un village du Bronze final ; 6).

CORBOUD 1993

Corboud P. - *Inventaire et étude archéologique des sites préhistoriques immergés du Léman : rapport sur les recherches réalisées en 1991 : communes de Veytaux, Corseaux, Cully, Lausanne, Saint-Sulpice, Préverenges, Tolochenaz et Saint-Prex (VD)*. Genève : Département d'anthropologie et d'écologie de l'Université, Groupe de recherches archéologiques lémaniques (Rapport de fouilles non publié).

CORBOUD *et al.* À paraître

Corboud P., Castella A.-C., Pugin C., Brochier J.-L., Rachoud-Schneider A.-M., Studer J. - *Les sites préhistoriques littoraux de Corcelettes et de Concise (VD) : prospection archéologique et analyse spatiale*. Lausanne : Cahiers d'archéologie romande.

DAVID-ELBIALI 2000

David-Elbiali M. - *La Suisse occidentale au II<sup>ème</sup> millénaire av. J.-C. : chronologie, culture et intégration européenne*. Lausanne : Cahiers d'archéol. romande. (Cahiers d'archéologie romande ; 80).

DAVID-ELBIALI, MOINAT 2005

David-Elbiali M., Moinat P. - Le Bronze final de la Suisse occidentale : révision du cadre chronotypologique, grâce aux découvertes de la nécropole de Lausanne-Vidy (canton de Vaud, Suisse). *Bulletin de la Société préhistorique française*, 102, 3, 613-623.

FISCHER 2003

Fischer V. - *La station Bronze final de Corcelettes (Grandson, Vaud) : accumulations rituelles de bronzes, Etude des collections du Musée cantonal d'archéologie et d'histoire de Lausanne*. 2 vol. Genève : Département d'anthropologie et d'écologie de l'Université (Travail de diplôme).

FISCHER 2005

Fischer V. - La station de Grandson-Corcelettes à l'âge du Bronze final : accumulations rituelles de métal. *Revue historique vaudoise*, 113, 153-167.

GAUTHIER 2005

Gauthier E. - Recherche d'une méthode d'analyse comparée des flux de métal à l'âge du Bronze (XVII<sup>e</sup>-IX<sup>e</sup> s.) en France orientale et en Transdanubie : utilisation et adaptation de la méthode des sommes focales. In: Berger J.-F., Bertocello F., Braemer F., Davtian G., Gazenbeek M., ed. *Temps et espaces de l'homme en société : analyses et modèles spatiaux en archéologie*. Rencontres internationales d'archéologie et d'histoire (25 ; 21-23 oct. 2004 ; Antibes). Antibes : Eds APDCA, 161-170.

HOCHULI, NIEFFELER, RYCHNER 1998

Hochuli S., Niffeler U., Rychner V. - Age du Bronze. Bâle : Société suisse de préhistoire et d'archéologie (SPM : La Suisse du Paléolithique à l'aube du Moyen-Age ; 3).

MORDANT *et al.* 2004

Mordant C., Saligny L., Gabillot M., Krolikowsky F. - Approches de la notion de flux de métal et de recyclage au sein des sociétés européennes de l'âge du Bronze. In : Lehoërff A., ed. *L'artisanat métallurgique dans les sociétés anciennes en Méditerranée occidentale : techniques, lieux et formes de production*. Rome : Ecole fr. de Rome. (Collection de l'Ecole française de Rome ; 332), 263-285.

PRIMAS 1995

Primas M. - Stand und Aufgaben der Urnenfelderforschung in der Schweiz. In : *Beiträge zur Urnenfelderzeit nördlich und südlich der Alpen : Ergebnisse eines Kolloquiums*. Bonn : R. Habelt (Monographien / Römisch-Germanisches Zentralmuseum, Forschungsinstitut für Vor- und Frühgeschichte ; 35), 201-224.

RYCHNER 1979

Rychner V. - *L'âge du Bronze final à Auvernier (lac de Neuchâtel, Suisse) : typologie et chronologie des anciennes collections conservées en Suisse*. 2 vol. Lausanne : Bibl. hist. vaudoise. (Auvernier ; 1-2, Cahiers d'archéologie romande ; 15/16)

RYCHNER 1987

Rychner V. - *Auvernier 1968-1975 : le mobilier métallique du Bronze final : formes et techniques*. Lausanne : Bibl. historique vaudoise. (Auvernier ; 6, Cahiers d'archéologie romande ; 37).

RYCHNER-FARAGGI 1993

Rychner-Faraggi A.-M. - Métal et parure au Bronze final. Neuchâtel : Musée cantonal d'archéol. (Hauterive-Champgrévyres ; 9, Archéologie neuchâteloise ; 17).

SCHIFFERDECKER 1982

Schifferdecker F. - *La céramique du Néolithique moyen d'Auvernier dans son cadre régional*. Lausanne : Bibl. hist. vaudoise. (Auvernier ; 4, Cahiers d'archéologie romande ; 24).

# ACI "Spaces and territories" 2005-2007 Archaedyn (contract ET28)

Spatial dynamics of settlement and natural resources :  
toward an integrated analysis over the long term from Prehistory to Middle-Ages

## Program's financial partners

Ministère de la Recherche et de l'Enseignement Supérieur

Centre National de la Recherche Scientifique

## Program's partners

UMR 6249 Chrono-Environnement, Besançon (MSHE C. N. Ledoux)

UMR 5594 ARTeHIS, Dijon (MSH Patrimoine, Espace, Mutation)

UMR 6042 GEOLAB, Clermont Ferrand et EA 1001, CHEC (MSH)

UMR 6130 CEPAM, Nice/Sophia-Antipolis (MSH Nice)

UMR 6173 CITERES, Tours (MSH Ville et territoires)

UMR 6573 Centre Camille Jullian, Aix-en-Provence (MMSH)

UMR 7041 ArScAn, Paris X Nanterre (MAE René Ginouvès)

IAPS, ZRC-SAZU, Ljubljana (Slovénie)

Réseau ISA (Information Spatiale et Archéologie)

## Conference's financial partners

Centre National de la Recherche Scientifique

Université de Bourgogne

MSH Dijon (UMS 2739)

MSHE Besançon (USR 3124)

Région Bourgogne

Région Franche-Comté

Ville de Dijon

## Conference's organizers

ARTeHIS (UMR 5594)

MSH Dijon (UMS 2739)

Chrono-Environnement (UMR 6249)

MSHE Besançon (USR 3124)

in collaboration with

Université de Bourgogne

Réseau ISA (Information Spatiale et Archéologie)

## Conference's sponsors

ESRI France

D3E Electronique

