

TEN YEARS IN ROUFFIGNAC CAVE:

a Collective Report on Findings from a Decade of Finger Flutings Research

Leslie Van GELDER

Finger flutings are found in caves throughout southwestern Europe, southern Australia, and New Guinea and were presumably made over a considerable time span within the Upper Paleolithic. Approximately 500 m² of flutings exist in Rouffignac Cave. Given the number, variety, and condition, Rouffignac became a valuable site for embarking on an indepth investigation into the field of finger flutings which now marks its first decade with this paper.

In 2000, Kevin Sharpe began researching in Rouffignac and later teamed with the author of this paper in 2001 to start an annual series of field work to the cave followed by laboratory experimentation to follow up on suppositions on the physical manufacture of the flutings which could then be tested against that which was investigated in the field. The initial work proposed examining the method and manufacture of flutings and bracketing the question of meaning.

Among the most important elements of method developed was the application of Marshack's "internal analysis" method which, though developed primarily to examine portable artefacts, proved equally valuable when applied to fluted lines on cave walls. Internal analysis examines the junctions, cross-sections, depth, width, and shape of lines as they intersect to determine the temporal sequencing of their manufacture, as well as the potential identity of the artist.

Laboratory work in this period helped to yield increasingly more reliable method for determining not only temporal sequencing of fluted lines, but also replicable evidence for determining *in situ* the use of right hand versus left hand (based on the distinctive lines a thumb makes vs the fifth finger); directionality of fluting based on buildup of material and striations within lines; further distinctions between animal made lines, stick lines, and finger fluted lines; and the manner in which the production of certain shapes such as full circles require specific lower body movement which other fluted units do not and might offer explanations as to their prevalence or absence in cave art.

An important methodological outgrowth of the laboratory and field work of this period was the acceptance of the use of the measure of width of three fingers in a fluted unit as a means for beginning to identify and determine individuals. For one or two lines in a unit, there is ambiguity as to the fingers used and which finger's fluted width is being measured. As such, a determination to focus on three fingered widths became central to this work. Further fine tunings were made to this method in terms of developing specific places on a unit to measure, such as measuring at the place where there is the least amount of space and buildup between the fingers, and consistently measuring at a space a few millimeters below the finger profile.

Once the three fingered unit was established as the primary means for establishing unique individuals, two significant areas of deeper research developed as an outgrowth. The first was a series of studies focused on the means to determine the age of fluters and the second focusing on means by which to establish the gender of fluters.

Studies were conducted from 2002-2004 in crosscultural, cross-age groups to determine if there were any significant differences in the three fingered measured width with regard to age of individuals. Result showed that though there were no significant differences in measures of adults and adolescents across cultures, there was a significant difference in the measure of a child's hand as opposed to an adult's. No adult / adolescent hands were recorded at a measure of 30 mm or smaller and very few were recorded below 34 mm. Experiments with young children suggested that children at age 3 were able to have the motor control to do small stream flutings, however by age 5 they were capable of far more significant capacity to create and sustain the drawing of longer and more complex lines. Implications of the scientific determination of children through the examination of flutings is discussed in a further section of this paper with regard to the creation of symbolic images by children and the geographical distribution of fluted lines by particular fluters in Rouffignac.



Finger fluters of Rouffignac: 44 mm female; chambers G, J
(found in conjunction with the Horse, Lion, and Patriarch Panels).

In the finer tuning of a method to determine individuals through flutings, the authors applied research in sexual dimorphism in hands and finger length to the profiles of hands found within the cave. Though imperfect, it offered for the first time a means for approaching the question of the determination of gender of an individual from a more scientifically derived basis.

Further work into determining more precisely the individuals within the cave has evolved throughout the decade and has moved from not only the three fingered width but to focusing on other aspects of uniqueness including: relative finger heights within the finger profile; heights and locations of flutings; depth and build-up in fluted units; propensity towards finger splay vs tight fluting; choice of location; idiosyncratic fluting shapes.

Recent research has looked to develop method for studying figurative fluted images in the hope of determining more accurately the identities of the artists and also in the hope of learning more with regard to the relationship between fluted panels and figurative images. At present seven unique individuals, three of whom are children, and five are likely female, have been identified.





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