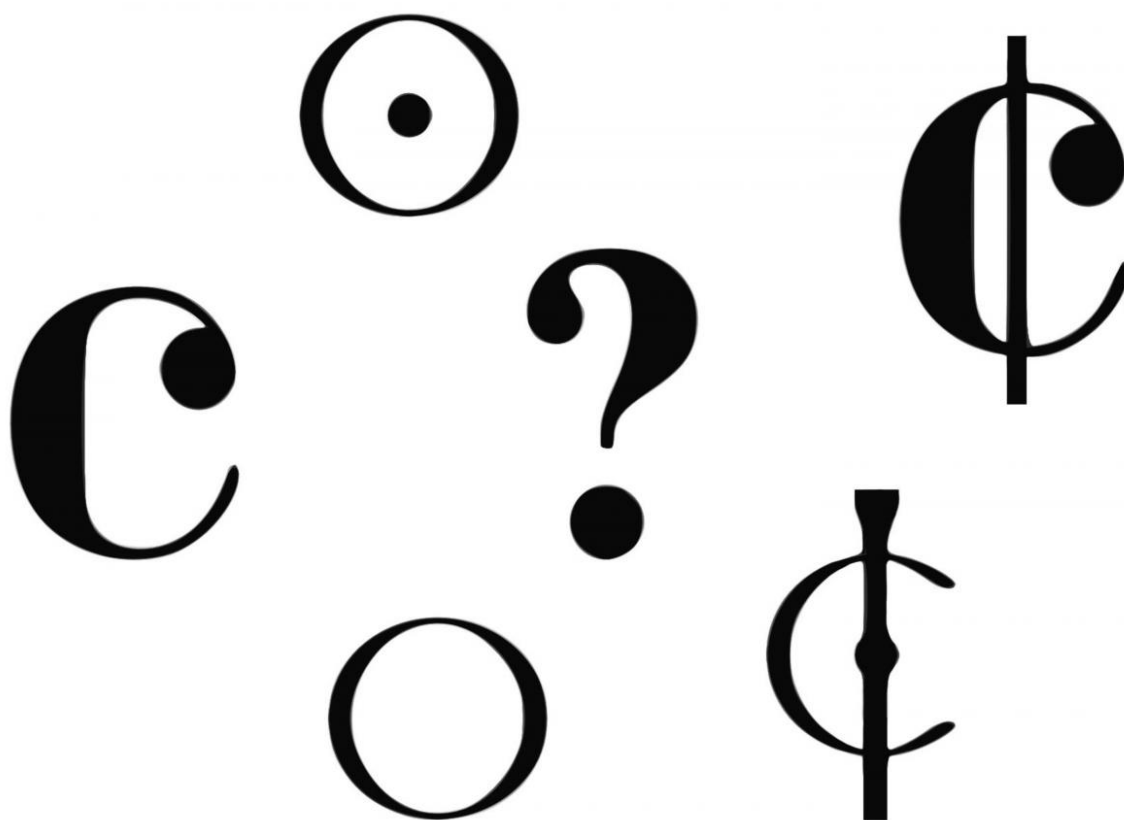


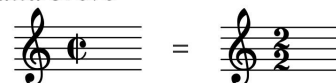
The origin of modern note values and time signatures: alla breve and common time (Tempi Part 2)



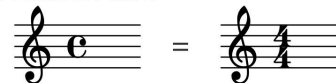
In this essay, I will explore the origin of *tempo*, modern note values and time signatures such as the symbols "C" for 4/4 time, also known as common time; and a vertical line or stroke on the symbol "C" for 2/2 time, also known as *alla breve*, by examining the predecessor of modern notation system called mensural notation.

Mensural notation originates in the later part of the 13th century and developed throughout until around 1600 when it evolved into modern notation system.

alla breve



common time



There is a theory that the very early example of those time signatures (C and slashed C) are found in a collection of musical essays known as "Ars Nova" (c. 1322) attributed to Philippe de Vitry (31 October 1291 – 9 June 1361), a renowned poet, music theorist, composer, diplomat and bishop. On the other hand, a musicologist Sarah Fuller made a provocative suggestion in 1985 that Vitry's Ars nova was "a phantom treatise", questioning his authorship and the very existence of the treatise(see ref. at the bottom of this essay).

This article will look into the musical treatise [Plaine and Easie Introduction to Practicall Musicke](#) (1597) written by Thomas Morley which gives us insight into mensuration system used between the 15th and 16th century.

Note

This is a continuation of the previous essay [Note Values, Tactus and Mensural Notation \(Tempi Part 1\)](#).

Note values in modern notation

Note Value

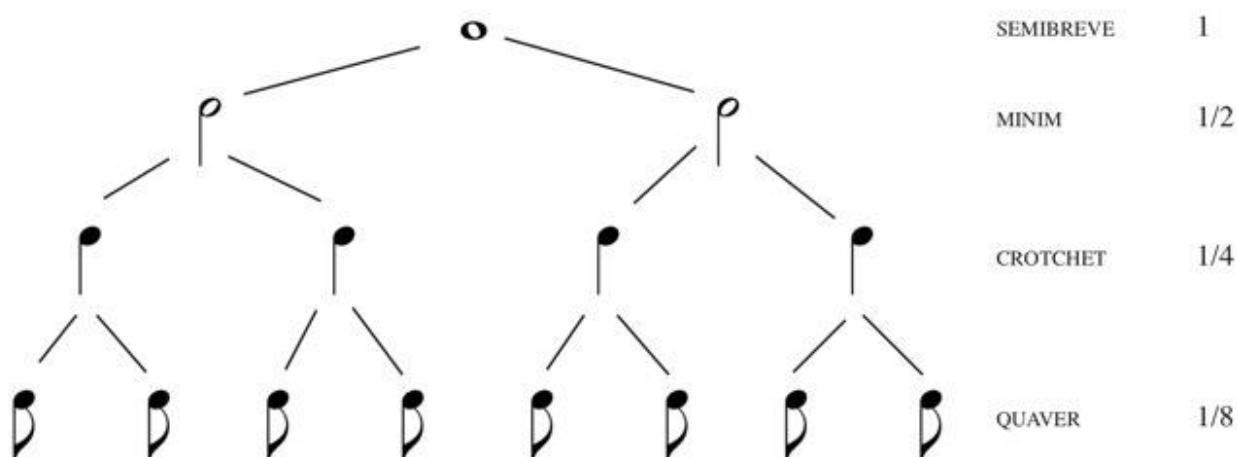


Chart 1: Modern note-value tree

A note value indicates the relative duration of a note. The chart above is a typical modern unmodified note-value tree showing relative relationships among different subdivisions, which is always a power of two (binary). The chart shows only up to quavers (eighth notes), but subdivisions go on in the same way. This binary system has been in use from 1600.

Note values in Renaissance mensural notation

And because you may the better remember the value of every note, according to every signe set before it, here is a Table of them.

A Table containing the value of every Note, according to the value of the Moodes or signes.

																																																																																																																																																																																																																																																																																																																																																																																								
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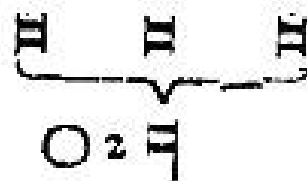
$\frac{1}{2}$	
	2
1	
	3
3	
	3
9	
	3
27	
	O3

Table 2: First column of the table 2 showing ratios

The mensuration sign "O" and "C" were also used in combination with numbers, a dot in the center of a sign, resulting a variety of mensurations.

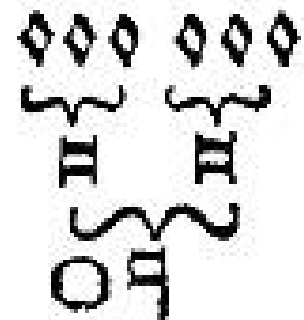


For example, the mensuration sign "O2" signifies that the relative relationship among subdivisions is a power of two (binary) except between "longa" and "breve" which is a power of three (ternary) according to the table 1 (see the third mensuration sign from the left highlighted in orange).





The mensuration sign "O" indicates that the relative relationship among subdivisions is a power of two (binary) except between "brave" and "semibrevis" which is a power of three (ternary).



Perfectum and imperfectum

The relationships of relative note values from maxima to semibrevis are powers of either two or three. When the power of three is applied, it is called perfectum (perfect), while the power of two is applied, it is called imperfectum (imperfect). Smaller note values are always imperfectum (divisible by two).

Mensurations: Maximodus, modus, tempus, and prolatio

The division of a maxima into longae, a longa into breves, a brevis into semibreves, and a semibrevis into minimae are called successively maximodus, modus (Modes), tempus (time), and prolatio (Prolation) [see the table 1].

When prolatio is ternary (divisible by three), it is called maior and when it is binary (divisible by two), it is called minor.

Diminished variants of the mensuration signs (diminution)

Each of the mensuration signs can have a diminished variant, indicated by a vertical stroke through the sign. This is called diminutum or diminution. These slashed signs represent a reduction of all temporal values by two (twice as fast).

Diminutum				

The origin of the common time and alla breve signs

And because you may the better remember the value of every note, according to every signe set before it, here is a Table of them.

A Table containing the value of every Note, according to the value of the Moodes or signes.

$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$	$\frac{1}{64}$	$\frac{1}{128}$	$\frac{1}{256}$	$\frac{1}{512}$	$\frac{1}{1024}$	$\frac{1}{2048}$	$\frac{1}{4096}$	$\frac{1}{8192}$	$\frac{1}{16384}$	$\frac{1}{32768}$	$\frac{1}{65536}$	$\frac{1}{131072}$	$\frac{1}{262144}$	$\frac{1}{524288}$	$\frac{1}{1048576}$	$\frac{1}{2097152}$	$\frac{1}{4194304}$	$\frac{1}{8388608}$	$\frac{1}{16777216}$	$\frac{1}{33554432}$	$\frac{1}{67108864}$	$\frac{1}{134217728}$	$\frac{1}{268435456}$	$\frac{1}{536870912}$	$\frac{1}{1073741824}$	$\frac{1}{2147483648}$	$\frac{1}{4294967296}$	$\frac{1}{8589934592}$	$\frac{1}{17179869184}$	$\frac{1}{34359738368}$	$\frac{1}{68719476736}$	$\frac{1}{137438953472}$	$\frac{1}{274877906944}$	$\frac{1}{549755813888}$	$\frac{1}{1099511627776}$	$\frac{1}{2199023255552}$	$\frac{1}{4398046511104}$	$\frac{1}{8796093022208}$	$\frac{1}{17592186044416}$	$\frac{1}{35184372088832}$	$\frac{1}{70368744177664}$	$\frac{1}{140737488355328}$	$\frac{1}{281474976710656}$	$\frac{1}{562949953421312}$	$\frac{1}{1125899906842624}$	$\frac{1}{2251799813685248}$	$\frac{1}{4503599627370496}$	$\frac{1}{9007199254740992}$	$\frac{1}{18014398509481984}$	$\frac{1}{36028797018963968}$	$\frac{1}{72057594037927936}$	$\frac{1}{144115188075855872}$	$\frac{1}{288230376151711744}$	$\frac{1}{576460752303423488}$	$\frac{1}{1152921504606846976}$	$\frac{1}{2305843009213693952}$	$\frac{1}{4611686018427387904}$	$\frac{1}{9223372036854775808}$	$\frac{1}{18446744073709551616}$	$\frac{1}{36893488147419103232}$	$\frac{1}{73786976294838206464}$	$\frac{1}{147573952589676412928}$	$\frac{1}{295147905179352825856}$	$\frac{1}{590295810358705651712}$	$\frac{1}{1180591620717411303424}$	$\frac{1}{2361183241434822606848}$	$\frac{1}{4722366482869645213696}$	$\frac{1}{9444732965739290427392}$	$\frac{1}{18889465931478580854784}$	$\frac{1}{37778931862957161709568}$	$\frac{1}{75557863725914323419136}$	$\frac{1}{151115727451828646838272}$	$\frac{1}{302231454903657293676544}$	$\frac{1}{604462909807314587353088}$	$\frac{1}{1208925819614629174706176}$	$\frac{1}{2417851639229258349412352}$	$\frac{1}{4835703278458516698824704}$	$\frac{1}{9671406556917033397649408}$	$\frac{1}{19342813113834066795298816}$	$\frac{1}{38685626227668133590597632}$	$\frac{1}{77371252455336267181195264}$	$\frac{1}{154742504910672534362390528}$	$\frac{1}{309485009821345068724781056}$	$\frac{1}{618970019642690137449562112}$	$\frac{1}{1237940039285380274899124224}$	$\frac{1}{2475880078570760549798248448}$	$\frac{1}{4951760157141521099596496896}$	$\frac{1}{9903520314283042199192993792}$	$\frac{1}{19807040628566084398385987584}$	$\frac{1}{39614081257132168796771975168}$	$\frac{1}{79228162514264337593543950336}$	$\frac{1}{158456325028528675187087900672}$	$\frac{1}{316912650057057350374175801344}$	$\frac{1}{633825300114114700748351602688}$	$\frac{1}{1267650600228229401496703205376}$	$\frac{1}{2535301200456458802993406410752}$	$\frac{1}{5070602400912917605986812821504}$	$\frac{1}{10141204801825835211973625643008}$	$\frac{1}{20282409603651670423947251286016}$	$\frac{1}{40564819207303340847894502572032}$	$\frac{1}{81129638414606681695789005144064}$	$\frac{1}{162259276829213363391578010288128}$	$\frac{1}{324518553658426726783156020576256}$	$\frac{1}{649037107316853453566312041152512}$	$\frac{1}{1298074214633706907132624082305024}$	$\frac{1}{2596148429267413814265248164610048}$	$\frac{1}{5192296858534827628530496329220096}$	$\frac{1}{10384593717069655257060992658440192}$	$\frac{1}{20769187434139310514121985316880384}$	$\frac{1}{41538374868278621028243970633760768}$	$\frac{1}{83076749736557242056487941267521536}$	$\frac{1}{166153499473114484112975882535043072}$	$\frac{1}{332306998946228968225951765070086144}$	$\frac{1}{664613997892457936451903530140172288}$	$\frac{1}{1329227995784915872903807060280344576}$	$\frac{1}{2658455991569831745807614120560689152}$	$\frac{1}{5316911983139663491615228241121378304}$	$\frac{1}{10633823966279326983230456482242756608}$	$\frac{1}{21267647932558653966460912964485513216}$	$\frac{1}{42535295865117307932921825928971026432}$	$\frac{1}{85070591730234615865843651857942052864}$	$\frac{1}{170141183460469231731687303715884105728}$	$\frac{1}{340282366920938463463374607431768211456}$	$\frac{1}{680564733841876926926749214863536422912}$	$\frac{1}{1361129467683753853853498429727072845824}$	$\frac{1}{2722258935367507707706996859454145691648}$	$\frac{1}{5444517870735015415413993718908291383296}$	$\frac{1}{10889035741470030830827987437816582766592}$	$\frac{1}{21778071482940061661655974875633165533184}$	$\frac{1}{43556142965880123323311949751266331066368}$	$\frac{1}{87112285931760246646623899502532662132736}$	$\frac{1}{174224571863520493293247799005065324265472}$	$\frac{1}{348449143727040986586495598010130648530944}$	$\frac{1}{696898287454081973172991196020261297061888}$	$\frac{1}{1393796574908163946345982392040522594123776}$	$\frac{1}{2787593149816327892691964784081045188247552}$	$\frac{1}{5575186299632655785383929568162090376495104}$	$\frac{1}{1115037259926531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