Subtending the Right Angle

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Flash in the Pan Music Matthew Malisky
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Chorale IVa

Calmly (take tempo from oboe)

Fl.

Ob.

Cl.

A.S.

Tpt.

Tbn.

Pno.

B.
Chorale VI
Broadly but with motion
Coda
Very slow and calmly, with soft interjections
L.56
Let $ABC$ be a right-angled triangle having the angle $BAC$ right; I say that the square on $BC$ is equal to the squares on $BA$, $AC$.

For let there be described on $BC$ the square $BDEC$, and on the $BA$, $AC$ the squares $GB$, $HC$; through $A$ let $AL$ be drawn parallel to either $BE$ or $CE$, and let $AD$, $FC$ be joined.

Then, since each of the angles $BAC$, $BAH$ is right, it follows that with a straight line $BA$, and at the point $A$ on it, the two straight lines $AG$, $AG$ not lying on the same side make adjacent angles equal to two right angles; therefore $CA$ is in a straight line with $AG$.

For the same reason $BA$ is also in a straight line with $AH$.

And, since the angle $DBG$ is equal to the angle $FBA$; for each is right: let the angle $ABC$ be added to each; therefore the whole angle $DBA$ is equal to the whole angle $FBC$.

And, since $DB$ is equal to $BC$, and $FB$ to $BA$, the two sides $AB$, $BD$ are equal to the two sides $FB$, $BC$ respectively; and the angle $ABD$ is equal to the angle $FBC$; therefore the base $AD$ is equal to the base $FC$, and the triangle $ABD$ is equal to the triangle $FBC$.

Now the parallelogram $BL$ is double of the triangle $ABD$, for they have the same base $BD$ and are in the same parallels $BD$, $AD$.

And the square $GB$ is double of the triangle $FBC$, for again they have the same base $FB$ and are in the same parallels $FB$, $GC$.

(But the doubles of equals are equal to one another.)

Therefore the parallelogram $BL$ is also equal to the square $GB$.

Similarly if $AE$, $BK$ be joined, the parallelogram $GL$ can also be proved equal to the square $HC$; therefore the whole square $BDEC$ is equal to the two squares $GB$, $HC$.

And the square $BDEC$ is described on $BC$, and the squares $GB$, $HC$ on $BA$, $AC$.

Therefore the square on the side $BC$ is equal to the squares on the sides $BA$, $AC$.

Therefore in right-angled triangles the square on the side equal to the squares on the side containing the right angle.

Quod erat demonstrandum.