Let's consider the motion of a single particle moving with a velocity v in a ground reference frame, say.

Recall that we defined the momentum of this object as mv.

And we know that Newton's second law can be written in terms of the change of momentum dp/dt.

And when we integrated Newton's second law, for impulse causes the integral of ADP from some time t prime equals 0 to some time t.

So we're integrating t prime.

And here, we're taking your momentum from some initial momentum to some momentum at time t.

We have that the impulse causes the momentum of this single particle to change.

And in particular, this is what we call impulse.

And if the impulse is 0-- so as an example, if the impulse fdt prime equals 0, that tells us that the momentum of our particle has not changed.

Now, let's consider our same thing for angular momentum.

The only difference is that we choose some point s.

And we'll write the vector rs to where the object is.

And our angular momentum we defined about the point s was the vector from s.

And we can indicate maybe to the mass m.

So it's a vector from s to where the object is located cross the momentum of the object.

And this is how we define the angular momentum.

And recall that our basic concept is that the torque about s causes the angular momentum about s to change for this single particle.

Now, torque is if there's a force acting on the particle.

So for instance, if the force were acting at some angle.

Not only does the force change cause the momentum to change, but we know that if there's a torque about s, it will cause the angular momentum of the particle to change too.

Now, let's talk about the angular impulse, which is integrating the torque from say some time t prime equals 0 to some time t.

And that's the integral of the angular momentum about s.

And now we're integrating this from some initial angular momentum to some final angular momentum.

And just as before, we have that the angular impulse will result in a change of angular momentum.

And in particular, if our angular impulse is 0, that implies that the angular momentum of this particle is constant.

And so you can see the analogies.

The important fact to realize is that in the reference frame, momentum does not depend on any point, but our angular momentum does depend on the choice of the point s.

And in particular, in terms of the impulse, the torque about s is also a quantity that depends on s.

And so that's the analogy between momentum of a single particle and angular momentum of a single particle.