Slope Decline Theory of W. M. Davis

1. Slope change is a sequential process.
2. The Slope Angle declines continuously, from Youth (Convex), Mature (Rectilinear) and Old (Concave)

Youth Stage

Steep Convex shape evolved during the youth stage of cycle of erosion due to active down cutting.

Mature Stage

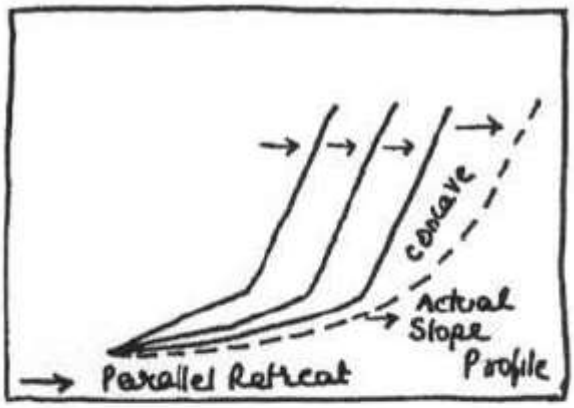
Lateral erosion exceeds the vertical erosion, slope decreases and smooth curve is formed.

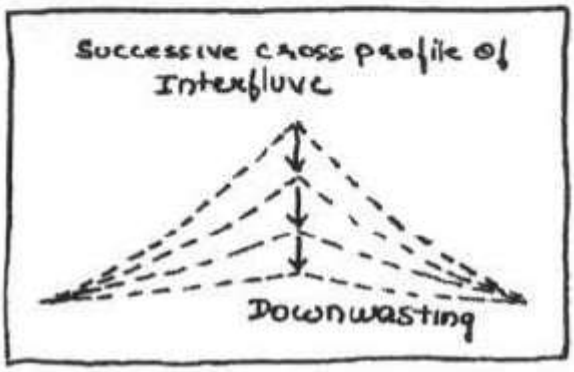
Old Stage

Marked decrease in Slope, Slope becomes Concave. The model is based on the assumption of crustal stability for longer duration.

Slope Replacement Theory of Penck

1. There is a river on the foot of the Slope which is neither eroding nor depositing but is capable of removing the material coming from upper segments of the Slope.
2. The Rocks fall from the upper reaches, and the lower segments of the Slope remains comparatively Stable.
3. For falling the Rocks gradients must be great, this gradient is available to all the units of rocks except the lowest portion of hill.
4. The Slope face except lower segment goes parallel retreat due to uniform rate of weathering and removal of material.
5. The parallel retreat results in Concave Slope Profile.
6. If the parallel retreat is happening on the both ends, then, both sides is subjected to down wasting and there is reduction in altitude.





Penck Trippen Concept

- First: Erosional landforms
- Second: Transportation
- Third: Depositional landforms.

As per Penck:

1. Slope retreat parallels from the convex and free face and meets together at a conclave slope.
2. Acute erosion in convex slope
3. Parallel retreat on free face slope. Not much erosion in rectilinear slope, only transportation of erosion material takes place.
4. On the concave slope deposition, eroded material deposited.
5. In the later stage, free face, and convex slopes converted to the rectilinear slope.

Graded slope:

It has three parts:

- Zone of erosion
- Zone of transportation
- Zone of deposition

As per Penck, the Zone of erosion will be on the convex and free face. The zone of transportation will be on a rectilinear slope. The zone of deposition will be on a concave slope.