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An Ordinary Sky by an Extraordinary Painter

Jan van Goyen, "Auf der Düne" ["On the dune"], oil on wood, 1642, [Museum der bildenden Künste \[Museum of Fine Arts\], Leipzig](#), Inv. No. 590

The Dutch landscape painters of the "Golden Age" created representations of the sky with a precision and closeness to nature like never before in the history of painting. In general, the meteorological phenomena represented in these paintings, such as clouds, atmospheric visual effects and visual ranges, among others, were very precisely observed and rendered. However, the selection of the weather situations represented is rather one-sided: powerful, towering heap clouds (cumuli) and dramatic representations of storms predominate, but the "ordinary, featureless weather", the cloudy skies that are part of the daily weather routine in Europe, do not appear as often in paintings as in the real atmosphere.¹ This is the result of compositional decisions along with a demand based on the tastes of that time, which – for the first time in the history of art – could be expressed in a more or less free arts market (North 2001, Ossing 2001).

The first conclusion to be drawn from this observation is that the often used approach of gleaned information from paintings as proxy climatological data is doomed to failure from the beginning. Painting, like any art form, does not simply reflect a linear version of reality.² This is also the case for Dutch Baroque painting. A second conclusion here is that Dutch cloud paintings should be examined to determine whether the situations depicted reflect European weather events, even if the paintings tend to overemphasize beautiful or dramatic representations of the sky.

At first glance, Jan van Goyen (1596-1656) is no exception in this respect: his paintings often depict towering fair-weather cumuli (e.g. in Fig. 1), usually in dune landscapes near the coast.



Fig. 1: Jan van Goyen, "Flussmündung" ["River mouth"], oil on wood, 1641, Inv. 787, [Museum der bildenden Künste \[Museum of Fine Arts\], Leipzig](#) ([click to enlarge](#))

Nevertheless, especially in van Goyen's work, there are also weather situations that do not correspond with the clichés in Dutch Baroque paintings of the sky.

Coast, dunes, clouds

A notable view of the sky is depicted in the 1642 painting, now in Leipzig, "Auf der Düne" (Fig. 2). Here the sky is mostly grey with a weakly developed structure; the richness of detail can only be seen when the painting is examined more closely. The observer's gaze moves first

¹ This idea was first expressed by Walsh (1991). Walsh drew the conclusion that the representation of clouds in 17th century landscape painting is thoroughly unrealistic. The authors do not share this opinion, in particular because none of Walsh's explanation is sound in meteorological terms. The more probable explanation is that the representation of meteorological phenomena is generally correct; however - quantitatively speaking - the wide variety of European weather situations is underrepresented in the paintings; cf. [Ossing \(2001\)](#) and other contributions at: <http://bib.gfz-potsdam.de/pub/wegezukunft/>

² However, it can be assumed that the efforts to depict realities in painting and the rise of modern science in the 17th century share a common root (Fischer 2001, 2005).

over a large expanse of water that might be the IJsselmeer; at the horizon, houses, windmills and trees can be seen in the distance, as we look from the left side, almost to the centre of the picture. These details indicate a distant land area. The right half of the picture depicts water up to the horizon and individual sailboats, but no sailing ships - this last is also an indication of a large inland body of water.

At right in the foreground a few people are sitting and standing together along with a dog on a dune. In the middle distance, though difficult to see, are more people apparently at the foot of the dune on the fortification against the erosional forces of water. In the Netherlands, the edges of the coast as well as the outer sections of the IJsselmeer, which was still an open estuary in the 17th century, are characterised by tidal flats and dunes. As early as the 13th century there was a closed winter dike



construction, supported by the natural barrier of the dunes, but preventing floods was an ongoing task (Gottschalk 1971-1975, Ossing et al. 2001) because land, water and air are constantly interacting, changing the coastal profile. Van Goyen's painting thus depicts a realistic example of geology.

Fig. 2: Jan van Goyen, "Auf der Düne" ["On the dune"], oil on wood, 1642, [Museum der bildenden Künste](#), [\[Museum of Fine Arts\]](#), [Leipzig](#), Inv. No. 590 ([click](#)

[to enlarge](#))

Rare average weather

The scenery in the picture indicates the winter half year from September to March; the people's clothing and the sparse ground cover allude to this as well. The sky is completely covered in a grey layer of clouds, under which a few smaller dark clouds can be seen (e.g. at upper right). The cloud layer has a few transparent spots through which sunbeams reach the ground, as shown by the illuminated dune at right.

The wind direction can be determined based on the position of the windmill blades and the boats' sails. The wind is blowing from left to right, and the cloud structure, which indicates wind shear, demonstrates this as well. The wind speed is not too high because the boats are not positioned at a sharp angle to the water. The six water birds at the centre of the picture also fit in here because water fowls prefer the formation flight shown here at low wind speeds because in a weak wind, there is less atmospheric turbulence.

This representation of clouds depicts - from a meteorological standpoint - a commonplace sky found all over the world: the layered heap cloud (*stratocumulus*) is the most common cloud (WMO 1987).³ In the painting, it covers the entire sky (subtype *stratiformis*), but includes small gaps through which the sky can be seen (*perlucidus*). In a few places this cloud cover appears thicker and therefore darker than in other places. Below this cloud layer are small, dark shreds of clouds (at the upper left edge of the picture). These small clouds form in the layer close to the ground due to ascending air parcels; they are cumulus clouds, in this case, the subtype *cumulus fractus*.

³ All cloud designations, their sub-types and accompanying phenomena are according to the "International Cloud Atlas," Vol. II, World Meteorological Organization WMO (Geneva, 1987) and are set in *cursive type* here.



The nearly smooth structure of the stratocumulus often forms near the coast due to the laminar flow which exists at low wind speeds over the sea (Fig. 3).

Fig. 3: Layered heap cloud (stratocumulus) and weakly structured heap clouds (cumulus fractus, cumulus humilis) at various levels, near the coast. This sky matches the clouds in van Goyen's work in Fig. 2 ([click to enlarge, photo: F. Ossing](#))

All of this indicates weather conditions that occur when a low pressure area has just passed through. Jan van

Goyen's painting depicts a situation in which Holland is under the influence in cold polar air in the rear of a low. This air mass originates in subpolar regions (Berlin air mass classification "mP", maritime polar air). Typical characteristics for this type of air mass in Europe during the winter season include clear views at far distances and the appearance of the clouds as shown, although these also allude to somewhat warmer streaks in the atmosphere (Geb 1981). As mentioned earlier, this is utterly average European weather, but Jan van Goyen's precise representation of this commonplace sky is among the rarer images of the sky painted during the "Gouden Eeuw" (golden age).

Realism and imagination

Elsewhere we have called the landscape painting of the Holland's "golden age" a "contrived reality": even real vedute are composed, the landscapes are seldom actual reproductions of this part of nature shaped by humans. The Dutch masters were possessed with a precision for detail in their paintings; each individual element in the picture - trees, clouds, topography, animals - is in line with the reality of nature. Still, the pictures are simply collections of components that seem real, compositions which reveal the highest artistic ability (Wehry/Ossing 1997, Gemäldegalerie Berlin 2001).

On closer examination, the skepticism expressed in many places regarding the meteorological correctness of the Dutch representations of the sky (Walsh 1991, most recently Behringer et. al. 2005) is actually unfounded. The Dutch landscape painters of the 17th century were extremely keen observers of nature; it would be astonishing, then, if they hadn't perceived the great diversity of European weather. If most of their paintings depict beautiful or dramatic weather conditions, it is not for climatological reasons (the "Little Ice Age") and not because they were not able to render everyday European weather, but instead because they were highly specialised contract painters who had to cater to public tastes. Jan van Goyen's painting demonstrates this for us; it is virtually a representative model of everyday weather, expertly painted.

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