Comments to D.H. Johnson & D.E. Dudgeon, "Array Signal Processing: Concepts and Techniques"

Chapter 2:

- Figure 2.1 (p 9). In ultrasound and radar imaging ϑ is usually the elevation and φ the azimuth. This is the opposite of the definitions in the figure text. There is however not a really well-defined definition for these angles.

Chapter 3:

- First equation in chapter 3.1.1 (p. 60) models the sensor output as a product $z(x,t) = w(x) \cdot f(x,t)$ (Eq. 3.1) and with a corresponding convolution in the spatial domain (Eq. 3.3).

  In ultrasonics it is more common to model the sensor output as a convolution $z(x,t) = w(x) * f(x,t)$ with the result that the incoming field is multiplied with the transform of the weighting. This is how baffle effects are modelled. It results in an element response which is in a fixed direction broadside to the element, see e.g. Selfridge, Kino, and Khuri-Yakub. "A theory for the radiation pattern of a narrow-strip acoustic transducer." Applied Physics Letters 37.1 (1980).

Chapter 4:

- The magnitude in the nearfield shown in fig 4.13 (p 150) shows that the amplitude has its maximum at the focal point. It is a well-established fact in for instance medical ultrasound that the intensity maximum is always closer than the focal point (see e.g. Figs 4 and 5 in Kossoff "Analysis of focusing action of spherically curved transducers." Ultrasound in medicine & biology, 1979). This is due to the r^{-1} in the array pattern (as in the eq. on top of page 149). This factor may have been omitted in the simulations leading to this figure and perhaps also in Figs. 4.14 and 4.15 also.