Let $f$ be analytic and locally univalent in the unit disk $D$, $f(0) = f'(0) - 1 = 0$. The author considers the expressions

$$\left| z + \frac{1}{2} (1 - |z|^2) \frac{f''(z)}{f'(z)} \right|, \quad (1 - |z|^2) \left| \frac{f''(z)}{f'(z)} \right|\quad \text{and} (1 - |z|^2)^2 \left| \left( \frac{f''(z)}{f'(z)} \right)' - \frac{1}{2} \left( \frac{f''(z)}{f'(z)} \right)^2 \right|, \quad z \in D.$$ 

First he derives properties of the behaviour of these expressions if $x \to \partial D$ and $f(\partial D)$ is a polygon in terms of the angles of these polygons. Then he succeeds in generalizing these properties to functions of bounded boundary rotation. This means a geometric interpretation of the above expressions in this case. The knowledge of these relations enables him to give a multitude of new interesting theorems about them resp. their geometric counterparts especially for convex and close-to-convex functions.

K.J. Wirths (Braunschweig)

**Keywords**: convex functions; locally univalent; bounded boundary rotation; close-to-convex functions

**Classification**:
- **30C45** Special classes of univalent and multivalent functions
- **30C50** Coefficient problems for univalent and multivalent functions
- **30C75** Extremal problems for (quasi-)conformal mappings, other methods
- **30C80** Maximum principle, etc. (one complex variable)