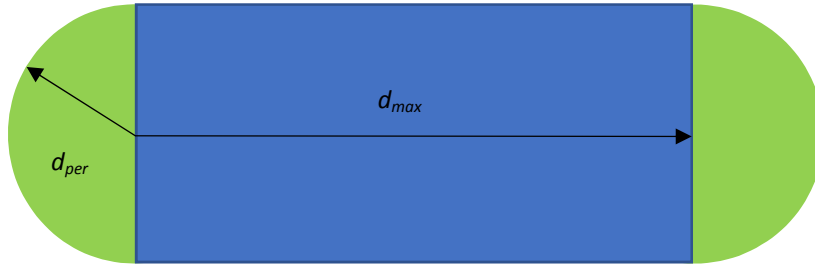


Supplementary material part 2

While covering a distance d_{max} , an individual with a perceptual range of d_{per} will be able to search a total surface of $2 \times d_{per} \times d_{max} + d_{per}^2 \times \pi$



As each individual has a circular foraging area. The radius of a circle with a surface of $2 \times d_{per} \times d_{max} +$

$d_{per}^2 \times \pi$ is defined as $\sqrt{\frac{2 \times d_{per} \times d_{max} + d_{per}^2 \times \pi}{\pi}}$