p. 170:

1

0

1

w

Figure 6.1.1. Decision weight of ranked probability pr as marginal w-contribution

r+p

decision weight

π(pr) = w(r+p)  −  w(r)

outcome proba-bility p

r

rank r

probabi-  
lity

Elucidation: This Figure was made using only MS Word. I drew the curve by hand.p. 173:

¼

¼

¼

80

140

120

¼

160

¼

¼

¼

80

40

20

¼

60

π(80) = π(0.25b) = w(0.25) = 0.0625.

¼

¼

¼

80

40

120

¼

60

π(80) = π(0.250.25) = w(0.50) − w(0.25) = 0.1875.

¼

¼

¼

80

140

120

¼

60

π(80) = π(0.250.50) = w(0.75) − w(0.50) = 0.3125.

π(80) = π(0.25w) = 1 − w(0.75) = 0.4375.

Figure 6.3.1. Rank dependence of decision weight for w(p) = p2

p. 173:

π(40) = w(¾) − w(½)

1

π(20) = 1 − w(¾)

½

¾

¼

0

1

Fig. b. w(p) = generates optimism.

π(60) = w(½) − w(¼)

π(80) = w(¼)

p

Figure 6.3.2. Decision weights π(α) of outcomes α from graphs of weighting functions

π(60) = w(½) − w(¼)

π(80) = w(¼)

π(40) = w(¾) − w(½)

½

¾

¼

0

1

π(20) = 1 − w(¾)

Fig. a. w(p) = p2 generates pessimism.

1

p

w(p)

Elucidation: Figure 6.3.2a contains the graph of the function:

w(p) = p2 .

Figure 6.3.2b contains the graph of the function:

w(p) = .

I made the graphs using Scientific Workplace as explained above.

p. 178:

0.8

0.99

0

0.2

0.4

rank r

0.6

0

0.01

0.03

0.04

0.0199

0.05

0.06

Fig. a. π(0.01r) for w(p) = p2 .

π(0.01r)

Figure 6.4.1. Dependence of decision weight on rank

π(pr) = w(p + r) − w(r) ≈ pw´(r) for p = 0.01.

0

0.2

0.4

rank r

0.99

0.6

0.8

0

0.01

0.03

0.04

0.02

0.059

Fig. c. π for w(p) of Eqs. 6.4.1 & 6.4.2 and Fig. 6.1.1.

0.051

0.99

0

0.2

0.4

rank r

0.6

0.8

0

0.01

0.03

0.04

0.02

0.05

Fig. b. π(0.01r) for w(p) = ; π(0.010.0) = 0.10.

.  
.  
.

Elucidation: Figure 6.4.1b contains the graph of the function:

− .

I made the graphs using Scientific Workplace as explained above. The TeX input file can be obtained here:

<http://personal.eur.nl/wakker/ptbook/figures/texfilesfigs/fig.6.4.1b_pi(0.01)sqrt.tex>

Elucidation: Figure 6.4.1c contains the graph of the function:

w(p) = (*exp*(− (−*ln*(p+0.01))a))b − (*exp*(− (−*ln*(p))a))b

with

a = 0.65 and b = 1.0467.

I made the graphs using Scientific Workplace as explained above. The TeX input file can be obtained here:

<http://personal.eur.nl/wakker/ptbook/figures/texfilesfigs/fig.6.4.1c_pi(0.01)prelec.tex>

p. 183:

Figure 6.5.1. αβ ~ γδ for risk

.

.

.

**γ**

.

.

.

**β**

p2

pm

x2

xm

.

.

.

pr

**α**

q2

qn

y2

yn

pr

~

p2

pm

x2

xm

pr

q2

qn

y2

yn

.

.

.

pr

**δ**

~

and

We have p > 0. The superscript r indicates the rank of p, which is the same for all prospects.

pp. 186 & 187:

46.50

cand2 wins

1

cand1 wins

~

Fig. a

10

cand2 wins

8

cand1 wins

109.75

cand2 wins

1

cand1 wins

~

Fig. b

46.50

cand2 wins

8

cand1 wins

199.74

cand2 wins

1

cand1 wins

~

Fig. c

109.75

cand2 wins

8

cand1 wins

316.47

cand2 wins

1

cand1 wins

~

Fig. d

199.74

cand2 wins

8

cand1 wins

Figure 6.5.2. Four indifferences

1050.87

cand2 wins

109.75

cand1 wins

~

Fig. d

316.47

cand2 wins

316.47

cand1 wins

316.47

cand2 wins

109.75

cand1 wins

~

Fig. c

109.75

cand2 wins

316.47

cand1 wins

109.75

cand2 wins

109.75

cand1 wins

~

Fig. b

46.50

cand2 wins

316.47

cand1 wins

46.50

cand2 wins

109.75

cand1 wins

~

Fig. a

10

cand2 wins

316.47

cand1 wins

Figure 6.5.3. Four indifferences

Elucidation: I put here two figures because they belong together.

p. 188:

PE3

PE1

0

0

Figure 6.5.4. Probability weighting graph derived from Figures 4.1.1 and 4.1.5.

1

1

p

¼

½

¾

w

PE2

p. 189:

.

.

.

.

.

.

p2

pm

x2

xm

pr

β

q2

qn

y2

yn

.

.

.

pr

β

p2

pm

x2

xm

pr



q2

qn

y2

yn

.

.

.

pr



implies

Figure 6.5.5. The rank-sure-thing principle for risk

p. 198:

4

Figure 6.8.1. The derivative of the weighting function

3

w´(r)

5

0.6

1

0

0.8

0.4

0.2

1

0

r

2

6

w´(r) = (−*ln*(r))a−1*exp*(−(−*ln*(r))a)(*exp*(−(−*ln*(r))a))b−1  
with a = 0.65, b = 1.0467.

Elucidation: The figure contains the graph of the function indicated in the legend.

I made the graphs using Scientific Workplace as explained above. The TeX input file can be obtained here:

<http://personal.eur.nl/wakker/ptbook/figures/texfilesfigs/fig.6.8.1deriv.prelec.tex>

p. 200:

Figure 6.9.1. RDU of a prospect with positive and negative utilities

U(xk+2)

U(xn)

. . .

U(x1)

. .

. . .

.

. . .

. . .

. . .

. . .

. . .

. . .

. .

.

1 − w(Gx,U(t´))

: The graph of w(Gx,U(τ))

w(pk+2+...+p1)

−

w(pk+1+...+p1)

1 =

w(pn+...+p1)

w(p1)

U(xk+1)

U(xk)

U(x3)

U(x2)

0

t´

0

w

U

...

t

w(Gx,U(t))

The prospect is p1x1 ... pnxn, with U(x1) ≥ ... ≥ U(xk) ≥ 0 ≥ U(xk+1) ≥ ... ≥ U(xn). w(Gx,U(t)) is the w-transform of the probability of receiving utility > t. The figure illustrates Eq. 6.9.1. For t > 0 the integrand is w(Gx,U(t), and for t´ < 0 it is the negative of 1 − w(Gx,U(t)). RDU is the area minus the area

.

w(pk+...+p1)

p. 201:

w(pk+2+...+p1)

−

w(pk+1+...+p1)

Figure 6.9.2. An illustration alternative to Figure 6.9.1

1 =

w(pn+...+p1)

U(x1)

. .

. . .

. . .

. . .

.

w(Gx,U(tτ))

.

U(xk+2)

U(xn)

1 − w(Gx,U(τ´))

w(pk+...+p1)

w(p1)

U(xk+1)

U(xk)

U(x3)

U(x2)

0

t´

0

U

w

t

. . .

. . .

. . .

. . .

. .

...

. . .

This figure has resulted from Figure 6.9.1 by rotating left and flipping horizontally.

p. 205:

Cognitive deviations from linear probability weighting (curvature)

motivational deviations from linear probability weighting (elevation)

Fig. 7.1.2a. Insensitivity:

inverse-S

w(p)

½

w(p)

Fig. 7.1.2b. **Common finding**

w(p)

½

Fig. 7.1.3a.  
Extreme insensitivity: 3 degrees of belief

Fig. 7.1.3b.

w(p)

Fig. 7.1.1a. Expected utility: linearity

1

w(p)

1

0

p

Fig. 7.1.1b. Pessimism:

convexity

w(p)

Elucidation: This Figure was made using only MS Word. The curves were drawn by hand.