**Corrections for the book CONVEX OPTIMIZATION THEORY,
Athena Scientific, 2009, by Dimitri P. Bertsekas**
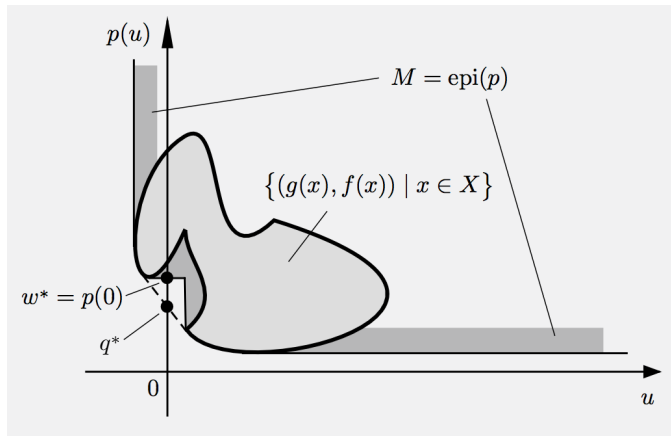

Last Modified: 11/5/10

p. 78, (Figure 1.5.8) At the top of the figure change "Hyperplane H that" to "Hyperplane that"

p. 78, (+1) Change "since P and $\overline{C}$ lie in the opposite closed halfspaces of H" to "[if $\overline{x} \in P \cap \mathrm{ri}(\overline{C})$ then $\overline{x} \in D \cap \mathrm{ri}(\overline{C})$, a contradiction since D and $\mathrm{ri}(\overline{C})$ lie in the opposite closed halfspaces of H and $H \cap \mathrm{ri}(\overline{C}) = \emptyset$]"
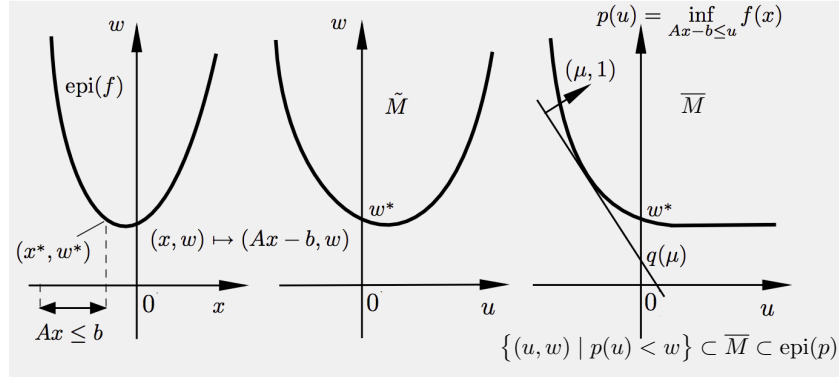
p. 78, (-8) Change "(since otherwise 0 would be in the interior of P, which is impossible since $0 \in H$ and P lies in a closed halfspace of H)" to "[since otherwise 0 would be in the interior of P; then, by the Line Segment Principle, for any $\overline{x} \in \mathrm{ri}(\overline{C})$ the line segment connecting 0 and $\overline{x}$ contains points in $\mathrm{ri}(D) \cap \mathrm{ri}(\overline{C})$, a contradiction of the fact that H properly separates D and $\overline{C}$]"

p. 79, (+5) Change "$0 \in \overline{C}$" to "$0 \in \overline{C} \cap M$"

p. 140 Fig. 4.2.2 should be corrected as follows:

p. 157 Fig. 4.5.2 should be corrected as follows:

$$\left\{(u,w) \mid p(u) < w\right\} \subset \overline{M} \subset \mathrm{epi}(p)$$

p. 157 Last line of caption of Fig. 4.5.2 should read as follows:
    "Also $\overline{M}$ is related to the perturbation function $p(u) = \inf_{Ax-b\leq u} f(x)$ as follows:

$$\left\{(u,w) \mid p(u) < w\right\} \subset \overline{M} \subset \mathrm{epi}(p).$$

In particular, we have $w^* = p(0) = \inf_{Ax\leq b} f(x)$."

p. 157, (-6) Change "equal" to "related"

p. 157, (-2,3) Change these two lines to "(cf. Fig. 4.5.2). The min common value is equal to $p(0)$, the optimal value:"

p. 176, (+4,5) Change "$\sum_{j=0}^{\bar{r}}$" to "$\sum_{j=1}^{\bar{r}}$"

p. 198, (+6) Change "$\sup_{d\in\Re^n}\left\{d'y - f'(x;d)\right\}$" to "$\sup_{d\in\Re^n}\left\{d'y - f'(x;d)\right\} \leq 0$"

p. 231, (+15) Delete the sentence "A symmetric ... (nonnegative, respectively)"

p. 237, (+7) Change "Prop. A.2.6(b)" to "Prop. A.2.6(c)"