Here is a list of corrections to the published version of *A Guide to NIP Theories*. Those have all been incorporated in the online version available on my webpage: `http://www.normalesup.org/~simon/book.html`.

Many thanks to Itay Kaplan, Nadja Hempel, Domenico Zambella, Alessandro Beraducci, Christian d'Elbée and Levon Haykazyan for pointing them out to me.

Last revision: October 16, 2015

- Lemma 2.7

  In the proof of left to right: $\{\phi(x;c) : c \in I_0\} \cup \{\neg\phi(x;c) : c \in I_1\}$ should be $\{\phi(c;y) : c \in I_0\} \cup \{\neg\phi(c;y) : c \in I_1\}$.
- Chapter 2, References and related subjects, p.30:

  Kaplan, Scanlon and Wagner show that NIP fields are Artin-Schreier closed, along with results about valued fields.
- Observation 3.2

  If $\pi(x)$ is a definable set with at least two elements and is stably embedded, then one can choose the formula $\psi(x_1, \ldots, x_n; z)$ in a way that it depends only on $\phi(x_1, \ldots, x_n; y)$ and not on the parameters b.
- Remark 3.34

  It follows from Proposition 3.32 that if I is ordered by a complete order and if there is a formula $\theta(x, y) \in L(I)$ which orders I, then I is stably embedded.
- Lemma 5.17

  The end of the proof should read:

  By Ramsey, we may find an Aa'-indiscernible sequence $(b'_i : i < \omega)$ realizing the EM-type of $(b_i : i < \omega)$ over Aa'. Then $a' \models \pi(x; b'_i)$ for every $i < \omega$. Let $f \in Aut(\mathcal{U}/A)$ send $(b'_i : i < \omega)$ to $(b_i : i < \omega)$ and set $a = f(a')$. Then $a \models \pi$ and the sequence I is indiscernible over Aa.
- Definition 6.8

  The set X_0 should be a multiset, i.e. we allow repetitions.
- Corollary 6.13

  The centered equation should read

$$\left| \mu(S) - \frac{|\{i : x_i \in S\}|}{q} \right| \leq \epsilon.$$

- Section 7.1, Borel measures.

  They are some details missing in the proof of construction of the regular Borel measure extending a Keisler measure. Here is a more complete argument.

  Let $\mu \in \mathfrak{M}_x(A)$ be a Keisler measure. It assigns a measure to every clopen set of the space $S_x(A)$. We show how to extend that measure to a σ-additive Borel probability measure. First, if $O \subseteq S_x(A)$ is open, we define $\mu(O) = \sup\{\mu(D) : D \subseteq O, D \text{ clopen}\}$. Similarly, the measure of a closed set F is the infimum of the measures of clopen sets which contain it. If $F \subseteq O$ are respectively closed and open, then there is a definable set between them. This implies that if X is either closed or open, we have

$$(Reg) \quad \sup\{\mu(F) : F \subseteq X, F \text{ closed}\} = \inf\{\mu(O) : X \subseteq O, O \text{ open}\}.$$

It is not hard to see that that μ is subadditive on open sets and that $\mu(O \setminus F) = \mu(O) - \mu(F)$ for F closed inside the open set O.

The next step is to show that the set of subsets $X \subseteq S_x(A)$ satisfing (Reg) is closed under complement and countable union. Complement is clear. For countable union: let $X = \bigcup_{i<\omega} X_i$ and fix $\epsilon > 0$. For each $i < \omega$, take $F_i \subseteq X_i \subseteq O_i$ with $\mu(O_i) - \mu(F_i) \leq \epsilon 2^{-i}$. Let $O = \bigcup_{i<\omega} O_i$. Note that $\mu(O) = \lim_n \mu(\bigcup_{i<n} O_i)$, because by compactness any clopen set inside O is already inside some $\bigcup_{i<n} O_i$. Then we can find some finite N such that $\mu(O) - \mu(\bigcup_{i<N} O_i) \leq \epsilon$. Let $F = \bigcup_{i<N} F_i$. Then we have $F \subseteq X \subseteq O$ and $\mu(O) - \mu(F) = \mu(\bigcup_{i<\omega} O_i \setminus F) \leq \mu(\bigcup_{i<N} O_i \setminus F) + \epsilon \leq \epsilon + \sum_{i<N} \mu(O_i) - \mu(F_i) \leq 3\epsilon$.

It follows that every Borel subset of $S_x(A)$ satisfies (Reg). We can therefore define μ on all such sets by $\mu(X) = \sup\{\mu(F) : F \subseteq X, F \text{ closed}\} = \inf\{\mu(O) : X \subseteq O, O \text{ open}\}$. It is easy to check that this defines a σ-additive measure on $S_x(A)$. Property (Reg) is refered to as *regularity* of the measure μ.

- Proposition 7.10, last paragraph of the proof.

  Now take points $(a_i : i < n)$ in $\mathcal{U}$ such that $a_i \models p_i$. Set $\lambda' = \frac{1}{n} \sum_{i<n} \operatorname{tp}(a_i/\mathcal{U})$. Let $b \in \mathcal{U}$ and let $i < n$ be such that $\models \psi_i(b)$. Then we have $\models \theta_i^0(x) \to \phi(x;b) \to \theta_i^1(x)$ and $\mu(\theta_i^1(x)) - \mu(\theta_i^0(x)) \leq \epsilon$. Thus $|\mu(\phi(x;b) \cap X) - \mu(\theta_i^0(x) \cap X)| \leq \epsilon$ and similarly $|\lambda'(\phi(x;b) \cap X) - \lambda'(\theta_i^0(x) \cap X)| \leq 3\epsilon$. Finally, since $\lambda'(\theta_i^0(x) \cap X)$ is within ϵ of $\mu(\theta_i^0(x) \cap X)$, we have that $\lambda'(\phi(x;b) \cap X)$ is within 5ϵ of $\mu(\phi(x;b) \cap X)$.

- Definition 7.23

  Let $\mu(x)$ be a global M-invariant measure. We say that μ is *fim* (frequency interpretation measure) if for any formula $\phi(x;y) \in L$, there is a family $(\theta_n(x_1, \ldots, x_n) : n < \omega)$ of formulas in $L(M)$ such that:

  - $\lim \mu^{(n)}(\theta_n(x_1, \ldots, x_n)) = 1$;
  - for any $\epsilon > 0$, for n big enough, for any $(a_1, \ldots, a_n) \in \theta_n(\mathcal{U})$, and any $b \in \mathcal{U}$, $\operatorname{Av}(a_1, \ldots, a_n; \phi(x;b))$ is within ϵ of $\mu(\phi(x;b))$.

- Theorem 7.29

  (ii) for any formula $\phi(x;y) \in L$ and $\epsilon > 0$, there are $a_1, \ldots, a_n \in M$ such that for any $b \in \mathcal{U}$, $\operatorname{Av}(a_1, \ldots, a_n; \phi(x;b))$ is within ϵ of $\mu(\phi(x;b))$.

- Proposition 7.30, end of the proof.

  Fix $\epsilon > 0$. By Proposition 7.27 there are $a_1, \ldots, a_n \in N$ such that for all $b' \in \mathcal{U}$, $\operatorname{Av}(a_1, \ldots, a_n; \phi(x;b'))$ is within ϵ of $\mu(\phi(x;b'))$ and also $\operatorname{Av}(a_1, \ldots, a_n; X)$ is within ϵ of $\mu(X)$. Then $q_y \otimes \mu_x(\phi(x,y))$ is within ϵ of $\operatorname{Av}(a_1, \ldots, a_n; X)$ which by definition of X is equal to $\operatorname{Av}(a_1, \ldots, a_n; \phi(x;b))$, which is within ϵ of $\mu_x \otimes q_y(\phi(x,y))$.

  As this holds for all $\epsilon > 0$, the result follows.

- Proposition 8.21

  The reduction to countable L is not so clear. One can argue using facts from the paper "Definably amenable NIP groups" with A. Chernikov: if p is f-generic in some language L, then its reduct to any sublanguage is also f-generic because it has bounded orbit. The reader may simply prefer to assume that L is countable in this proposition.

- Section 8.4 Compact domination. The paragraph before Lemma 8.39 should be:

Fix a countable elementary submodel $\mathbb{U}$ of the set theoretic universe containing L, T, M, G, μ etc. If $a \in \mathcal{U}$ is a finite tuple, a point $b \in G(\mathcal{U})$ is said to be *random* over Ma if there does not exist some Borel set $B \subseteq S_{xy}(M)$ coded in $\mathbb{U}$ such that $B(a,b)$ holds and $\mu(B(a,y)) = 0$. Note that such a b always exists because we have to avoid countably many Borel sets of measure 0.