Eesley *et al.* Reply: Han, Vardeny, Symko, and Koren [1] have questioned our results and interpretation of the carrier dynamics in $Tl_2Ba_2Ca_2Cu_3O_{10}$ (TBCCO) near the superconducting transition temperature [2]. In response, we wish to reiterate the conclusions of our paper. First, we still believe that the carrier dynamics in high-temperature superconductors are indeed consistent with the dynamics observed in conventional metallic superconductors [3]. *In the vicinity of T_c, there is a diverging relaxation time for perturbations to the order parameter.* The temperature dependence should follow $\tau_s \sim T/\Delta(T)$ [3], and with careful measurements one could infer $\Delta(T)$. *We did not claim, however, that our results indicate BCS coupling,* weak or strong. We state in our paper [2] that "our data do not provide a precise confirmation of the detailed temperature dependence. . . ." For comparison to our data, we used $\Delta(T)/\Delta(0)$ from [4] where it was shown to agree with tunneling measurements in high-T_c materials. That the gap measurements were approximated [4] by the weak coupling $\Delta(T)/\Delta(0)$ may only be coincidental.

The method used to determine relaxation times can influence the detailed temperature dependence. In our original work [2] we determine τ_s by deconvolving the instrument response from the data, and modeling the signal by the sum of two exponential decays. A portion of our original data are shown in Fig. 1(a), where we have used the display format of decay time versus temperature. One can readily see the shift in $\tau(T)$ resulting from optical heating of the sample, and possibly some power dependence in the onset region. In any case, it is obvious that measurements which represent a small perturbation are desirable.

The fact that our TBCCO sample exhibits a broad transition region ($\sim$14 K) and different optical properties relative to $YBa_2Cu_3O_7$ (YBCO) renders the comparison by Han *et al.* qualitative at best. To reinforce this issue, Fig. 1(b) shows our recent measurements of high-quality YBCO films [5]. Our 300- and 50-K measurements agree well with those of Han *et al.* [6]. However, in the vicinity of T_c, the rather complicated structure in the ΔR signal does not appear amenable to the "$\tau_{1/2}$" decay-time analysis of Han *et al.* Such observations may be sample dependent, and these issues could be clarified if Han *et al.* would show their I_0 measurements of $\Delta R(t)$ in the vicinity of T_c.

As indicated in our original paper [2], we appreciate the value of performing detailed measurements versus optical power and sample temperature. The Comment of Han *et al.* addresses this point, and appears to correct some discrepancies in the previous work [6]. Their recent measurements may be "contrary to the data" shown in our work, but they appear contrary to their original data as well. Han *et al.* [6] observed that the decay-time temperature dependence for $I = 3\ \mu J/cm^2$ ($=6I_0$ in the Comment) is simply "shifted more towards T_c, probably due to less heating" when the intensity is reduced to 1 $\mu J/cm^2$. Was the dramatic temperature dependence shown in the Comment not observed originally? Perhaps differences in sample fabrication or wavelength-dependent optical properties are responsible. These issues must also be addressed to obtain a clear picture of order-parameter dynamics in these materials.

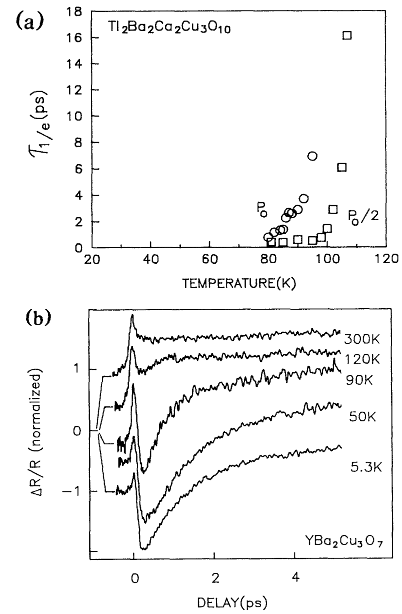

FIG. 1. (a) Temperature dependence of the order-parameter relaxation time in $Tl_2Ba_2Ca_2Cu_3O_{10}$ for two power levels, with $P_0 \sim 1.8$ mW (an intensity of $\sim 3\ \mu J/cm^2$, see [2] for details). The temperature axis corresponds to the cryostat temperature, and does not account for average optical heating of the illuminated sample. (b) Transient reflectivity change observed from a 800-nm-thick $YBa_2Cu_3O_7$ film. Each transient has been normalized to its peak value and offset for clarity. Temperatures correspond to cryostat temperatures and the resistivity-measured critical temperature is $T_c = 85$ K.

G. L. Eesley, J. Heremans, M. S. Meyer, and G. L. Doll
Physics Department, General Motors Research Laboratories
Warren, Michigan 48090-9055

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